THE TRI-STATE
Medical Journal and Practitioner

VOL. VI., NO. 4. APRIL, 1899.

Issued Monthly for One Dollar a Year.

EDITORIAL DEPARTMENT.

WARREN B. OUTTEN, M. D., - - - EDITOR.
JAMES MOORES BALL, M. D., - - - ASSOCIATE EDITOR.
OTHO F. BALL, M. D., - - - - - BUSINESS MANAGER.

Address all communications, news of medical interest, subscriptions, etc., to the TRI-STATE MEDICAL JOURNAL AND PRACTITIONER, CENTURY BUILDING, ST. LOUIS, MO.

WHAT IS THE TRUE ORIGIN OF CONSUMPTION—ANIMAL OR VEGETABLE?

The transition in thought regarding pathologic problems in the realm of tuberculosis certainly has been broad enough in the past decade. But almost the entire line of investigation has been in the direction of the animal origin of the tubercle bacilli; but recently the study of the vegetable origin of the bacilli has lent a new source of interest. According to the *La Médecine Moderne*, the investigation has been regarding pseudo-bacilli found on a kind of grass which grows abundantly in certain portions of France. It (*La Médecine Moderne*) says: "In studying this grass, M. Moeller discovered a bacillus that has points of resemblance with the Koch bacillus even more striking than those of the other pseudo-bacilli of tuberculosis. The resemblance is even so strong that we may ask in what respect the false bacillus differs from the true." The conclusions arrived at in this article are that this pseudo-bacillus is nothing more or less than the tubercle bacillus modified by environment, and indicates the immense sourceful breadth of the tubercle bacillus for infecting all sources of life. Continuing, it says: "This would be an interesting point to elucidate. Up to the present time vegetables have not been suspected of harboring parasites of the tubercle family. It is possible that grasses may give refuge to a variety of the Koch bacillus living on their stems as suprophytes and capable by passage into the stomachs of cattle of acquiring virulent activity, as the bacillus of human tuberculosis. We know that another parasite, that of actinomycosis, has been found on the beard of wheat. The hypothesis of a similar for the tubercle bacillus has nothing improbable in

it." It is a deplorable fact that our sources of information regarding the wide extent and infectivity of the bacillus has not lead us in the direction of effective therapeutic measures. Perhaps, as first suggested by Paget, there may be in the vegetable world microbic forms capable of combating those in the animal world. In any event, here is a field open for a new Koch. Perhaps tuberculosis may have a vegetable origin, after all; for there may be much in the study of the pseudo-bacillus. Let this new Koch give us a new serum made from the grass bacillus; there may be a potential and tolerant element yet undiscovered. The realm of effective therapeusis in many forms of tuberculosis certainly is very small and uncertain, and truly not broadly utilitarian. Consumption (phthisis pulmonalis) is almost synonymous with death, and as yet there is no medicine for its cure.

SEEING RAINBOWS INSTEAD OF STARS.

For many years physicians throughout the southwest portion of the United States heard strange stories about the mescal button, called by the Indians in Texas the "woak wae teth cup." This, too, long before Lewin had discovered and named it. The editor of this journal has seen its effect upon a tribe of Indians in the Panhandle country of Texas. In 1888 Lewin, of Berlin, discovered this cactus and named it "Anhulorium Lewinii," and demonstrated that it contained a poison that might be classified with strychnine; but he had not discovered, like the Indians, that it contained vision exciting powers. This particular Indian tribe of Texas were known to be willing to pay for mescal buttons their weight in gold and on festal occasions enter into a vision-producing debauch. Seated on the ground around the camp-fire, with all due solemnity they would swallow from three to ten buttons and gravely await visions to come from the happy land. Dr. S. Weir Mitchell was the first person to give a scientific description of the effects of the mescal button. The Smithsonian Institute has reprinted a paper by Havelock Ellis, of London, on "The Peculiar Effects of the Mescal Button." From this we learn that all of the senses are to some extent stimulated by mescal. The visual perceptions are chiefly affected; ravishing displays of color of infinite variety of hues and tints—scarlets, crimsons, pinks, blues, golden, and an intense appreciation of blue and violet. The visual phenomena were best perceived when the experimentor's eyes were closed. Occasionally the sense of smell was excited delightfully. Mr. Ellis says, "Mescal intoxication may be described as chiefly saturnalia of the specific senses, and above all an orgy of vision. A large part of its charm lies in the halo of beauty which it casts around the simplest and commonest objects. It reveals an optical fairyland, where all the senses now and then join the play, but the mind itself remains a self-possessed spectator. Mescal intoxication thus differs from the other artificial paradises which drugs procure. Under the influence of alcohol, as in normal dreaming, the intellect is impaired, though there may be a consciousness of unusual brilliance. Hasheesh again produces an uncontrollable tendency to movement and bathes its victim in a sea of emotion. The mescal drinker remains calm and collected among the sensory turmoil around him. His judgment is as clear as in the normal state. He falls into no oriental and voluptuous reverie. On this ground it is not probable that its use will easily develop into habit."

ALL IS SUGAR TO THE VAIN, EVEN THE PRAISE OF CRAFTY VENDORS.

In these days of illustration, almost everything is made to catch the eye and please the senses; all descriptive reading adorned with pictures. A modern newspaper appeals to almost every element of thought, and enhances interest constantly through artistic effort. Every phase of a prominent career is depicted in the most effective way by illustrations wonderfully numerous and varied. Hence, the face of any prominent man soon becomes familiar to many millions of people; and, indeed, it must be a strong man whose vanity is not touched by the persistent way he is made to adorn the pages of journals. But it has remained for patent medicine vendors to indicate practically in the deepest and most indelible lines the enormous vanity of the average public character. These persons (the vendors) have shown that the limit of vanity is hard to touch, and that it is the food of more than fools; but catering to vanity has become the tool of tools in the hands of nostrum makers. There are many fools of vanity who will eagerly recommend anything from a c. c. pill to a cocaine poison, provided their likeness shall appear; for when seen 'tis applause to their hearts even though it indicates in every line that the subject depicted has been used as a cat's-paw by a medicine vendor. 'Tis sad to note that with certain generals, governors of States, members of Congress, statesmen and law-makers, their vanity has become a very ordinary commercial commodity, valuable in proportion to their misapplied judgment. Vanity is not only an enemy to dignity, but is the quicksand of reason; it certainly cannot lend either respect nor dignity for any governor of a State to recommend a nerve medicine or some pill remarkable for its ability to create internal dissension, intestinal strife. But, then, we agree with Josh Billings that "vanity is a strange passion: rather than be out of a job, it will brag of its vices."

TESLA AND HIS WORK TOWARDS INFINITE POSSIBILITIES.

To confine the imagination in these inventive days of electricity is as facile a performance as to make mercury not obey the laws of gravity. Psychologically not the least interesting study is the mental by-play of various writers of the lay press to make some new invention, particularly about electricity, overflow in ponderous and unknown possibilities. A recent writer in the New York *Herald* makes Jupiter a pigmy alongside of Tesla; the Jove of old seems to have been rather erratic and irregular in his play with thunderbolts; but Tesla plays with thunderbolts of such infinite power and possibilities as to make our ancient mythological deity an infant amateur, a puny performer. Thus he says "Tesla makes the unseen a visible, terrible manifestation in nature. He generates currents that would not disturb a fly on your sleeping babe, yet they are as devastating as a cyclone. He gives the faintest whispering current force a force that disintegrates armor plate as quickly as you melt sugar with water. In a way he brings certainty out of chaos. He makes substance from nothing. That which you can neither see, taste, hear, nor smell, he lashes into a storm of fury, and you hear this nothing roar and thunder like Niagara. * * * In one sense it may be said that the only sure thing to-day, the

only thing that can be predicted with unfailing accuracy, is that which no man has seen with his naked eye, nor touched, nor heard, nor tasted with his lips—the star which no one has beheld, but which science has already catalogued and which will appear next year or next century to the hour and minute. Who dares to stake his life on the sure arrival of to-morrow's five o'clock express at that hour? Yet all the world knows that to-morrow's eclipse will arrive on time to the second. It is along these omnipotent, infallible lines of science that Tesla is apparently working. "With his oscillator and condenser Tesla says he sends waves of electricity through space with a force that makes dynamite a child's toy by comparison." Here flows language which depicts astounding possibilities. Strong as they seem, still Tesla's own words were easily their suggestion. What Tesla can accomplish with electricity as a curative agent remains to be seen. Doubtless our readers will take interest in a description of the manner in which Tesla came to his conclusions. From experiments he concluded that the body of a person may be subjected, without danger, to excessive electrical pressures amounting to several million volts. This has been shown in actual practice. He refers to the instantaneous cleaning of the skin by merely placing a person in the vicinity of a source of intense electrical oscillations with the effect of throwing off within the twinkling of an eye all extraneous matter adhering to the body.

Of his experiments Tesla says:—

"Soon my efforts were centered upon producing in a small space the most intense inductive action, and by gradual improvement in the apparatus I obtained results of a surprising character.

"For instance, when the end of a heavy bar of iron was thrust within a loop powerfully energized, a few moments were sufficient to raise the bar to a high temperature.

"Even heavy lumps of other metals were heated as rapidly as though they were placed in a furnace.

"When a continuous band formed of a sheet of tin was thrust into the loop the metal was fused instantly, the action being comparable to an explosion; and no wonder, for the frictional losses accumulated in it at the rate of possibly ten horse power.

"Masses of poorly conducting material behaved similarly, and when a highly exhausted bulb was pushed into the loop the glass was heated in a few seconds nearly to the point of melting.

"When I first observed these astonishing actions I was interested to study their effects upon living tissues.

"As may be assumed, I proceeded with all the necessary caution, and well I might for I had the evidence that in a turn of only a few inches in diameter an electromotive force of more than ten thousand volts was produced, and such high pressure would be more than sufficient to generate destructive currents in the tissue.

"This appeared all the more certain as bodies of comparatively poor conductivity were rapidly heated and even partially destroyed.

"One may imagine my astonishment when I found that I could thrust my hand or any other part of the body within the loop and hold it there with impunity.

"On more than one occasion, impelled by a desire to make some novel and useful observation, I have willingly or unconsciously performed an experiment connected with some risk, this being scarcely avoidable in laboratory experience.

"Now, why is it that in a space in which such violent turmoil is going on living tissue remains uninjured?

* * * * * * * * * *

"The only plausible explanation I have so far found is that the tissues are condensers. This only can account for the absence of injurious action.

* * * * * * * * * *

"It might be possible to sterilize wounds, or to locate or even to extract metallic objects, or to perform other operations of this kind within the sphere of the surgeon's duties in this novel manner.

"Most of the results enumerated, and many others still more remarkable, are made possible only by utilizing the discharges of a condenser.

"It is probable that but a very few—even among those who are working in these identical fields—fully appreciate what a wonderful instrument such a condenser is in reality. Let me convey an idea to this effect:

"One may take a condenser, small enough to go in one's vest pocket, and by skillfully using it he may create an electrical pressure vastly in excess—a hundred times greater, if necessary—than any producible by the largest static machine ever constructed.

"Or he may take the same condenser and, using it in a different way, he may obtain from it currents against which those of the most powerful welding machine are utterly insignificant.

"Or, again, he may avail himself of the same marvelous instrument and, by suddenly discharging its stored electricity, he may create such a terrific commotion in the space that, though silent and invisible, it can be detected, as actually demonstrated, at distances much greater than those at which the sound of the largest gun is perceptible, distances which are measured in tens, perhaps hundreds, and even thousands of miles.

* * * * * * * * * *

"The physician will be able to obtain an instrument suitable to fulfill many requirements. He will be able to use it in electro-therapeutic treatment in most of the ways enumerated. He will have the facility of providing himself with coils such as he may desire to have for any particular purpose, which will give him any current or any pressure he may wish to obtain.

"Such coils will consist of but a few turns of wire, and the expense of preparing them will be quite insignificant.

"The instrument will also enable him to generate Roentgen rays of much greater power than obtainable with ordinary apparatus.

"A tube must still be furnished by the manufacturers which will not deteriorate, and which will allow to concentrate larger amounts of energy upon the electrodes.

"When this is done nothing will stand in the way of an extensive and efficient application of this beautiful discovery, which must ultimately prove itself of the highest value, not only at the hands of the surgeon, but also of the electro-therapist, and, what is most important, of the bacteriologist."

A NEW DISCOVERY—DECLARED TO BE AS BENEFICIAL TO HUMANITY AS WAS ANÆSTHESIA.

To-day there is no doubt but that the most consummate factor in new information in every direction, scientifically or otherwise, is the newspaper. The Sunday editions of metropolitan issue are marvels in an artistic way; marvels in the wondrous variety, breadth, and usefulness of the knowledge contained within them. All domains searched for information with intense interest, it is keenly scrutinized, intelligently interpreted. No savant will praise more sincerely or be more enthusiastic in the discovery of new and beneficial elements than they. Recently the discussion of the secret of artificial air has been very prominently discussed, its future usefulness predicted, and its immense benefits descanted upon. A French scientist, George F. Joubert, whilst endeavoring to facilitate submarine travel by purifying the atmosphere in submarine boats, discovered a chemical substance which removes all the impurities from vitiated and respired air, making the same

absolutely pure, which he calls "aerogene" or "zoogene." It is asserted that with a few grains of a simple and inexpensive compound he can clear the rankest and most vitiated atmosphere—the reeking atmosphere of crowded public hall or theater. 'Tis along these lines we doubt, for it is asserted by one journal (1) "he can (Mr. Joubert) make the vilest-smelling cars or densely-thronged dry goods store as sweet and pure as the air of the fields; he can maintain perfect ventilation in the sick-room, bedroom or bath-room without opening a window; and he has solved the problem of the diver, the fireman; the miner, and the submarine boat. In a word, science has now given us a compound, cheap and easy to produce, which destroys the noxious and deadly character of air already breathed, and at the same time restores again its sustaining properties."

In a letter to the New York *Journal* he (the discoverer) explains in detail his experience and experiments with it. We will make no excuse to the reader for quoting broadly, owing to the importance of the subject. Mr. Joubert says:

"In my chemical investigations I have discovered a substance which makes vitiated air perfectly pure. Its name is not of much consequence, but I call it 'aerogene' or 'zoogene.' The Greek roots clearly indicate my meaning.

"When I discovered this atmospherically purifying substance, I wrote a paper upon it in relation to submarine boats. The paper was read by an eminent professor, Dr. Laborde, before the Academy of Medicine. All members of the Academy agreed with me. The Ministry of Marine have now taken up my discovery, and at present I am making experiments under the auspices of the Navy Department.

"I like to live under water, and often spend a day there. My primary ambition is to make my country's navy the most powerfully destructive in the world.

"The chemical substance I have discovered removes all irrespirable products and replaces them by the required quantity of oxygen.

"The substance is solid, and takes up little space. The cost of its production is little.

"With four pounds of it a man can breathe the purest air for twenty-four hours. Thus, not a very large quantity would keep the crew of a submarine boat in a healthy condition for a long time.

"I have experimented upon animals very successfully in my laboratory. I have put a guinea-pig under an air-tight formation of glass, and as far as atmospheric conditions are concerned the animal could live on indefinitely. I have put a close-fitting respiratory mask upon men and made a similar experiment, with success. I have done likewise with my own self, and have attended to my work with as much ease as if I were breathing the atmosphere of the Mediterranean in mid-winter.

* * * * * * * * *

"How did I make my discovery? It has been the dream of my life. It is easy enough to reduce respirable air to its component parts. Take the air vitiated by respiration. The point is to remove the impurities caused by breathing. The composition of respirable air is seventy-nine per cent. of nitrogen and twenty-one per cent. of oxygen. Suppose the air to have been made foul by respiration; the nitrogen can be mixed with

oxygen so as to restore it to its normally pure state. It is a problem of chemistry which I have worked out. I have found some suggestions in Tyndall's works which were of great use to me.

"I have produced specifically the two following results:

"*First.*—I have purified vitiated air of its carbonic acid, of its vapor of water, and of other irrespirable products.

"*Second.*—I have given in exchange to this air the exact quantity of oxygen which it needed to make it pure. The chemical substance which I have compounded brings about these results automatically.

"Broadly stated, applications of artificial air may be said to be two-fold—preventive and medicinal. The preventive application would be, for example, against asphyxiation. It may be used for all apparatus intended for irrespirable surroundings. It may be used with great advantage in the head-gears of firemen, sewermen, miners, colliers, etc.

"Looking at zoogene from a medicinal standpoint, it is obvious that its application will be very extensive. A few grains of it carried in one's waistcoat pocket will be sufficient for the ordinary needs of therapeutics.

"Air already breathed is not only useless, but is noxious. Zoogene stops this destructive quality.

"A submarine boat may be a perfect gem of art, but without air it is of no value. Now, as the air can be renewed for as long a time as we please, I should not be surprised if the nations set about building submarine navies. As to the vast and almost inconceivable application of this discovery to medicine, human industry, mercantile life, and even the household—I leave this to other experimenters."

THE INFLUENCE OF DIET ON GENIUS AND LITERATURE.

Lombroso concluded that the physiology of the man of genius and his productivity in literature and the pathology of the insane show many points of coincidence, and seemingly demonstrates actual continuity. In either case there is continued and unusual cerebral activity with an acute, full-blooded, acting brain to meet the income and outgo of the brain's product. The association of genius with both physical and psychical defect has been well studied; the physical construction of genius presents a very varied and interesting study in almost every direction taken. Man naturally seeks a standard; hence in his own brain he always pictures an ideal. To the average man the grandeur of intellect is almost constantly associated with grandeur of physical construction; but genius seeks its own abode, and many ordinary and even insignificant bodies contain God-endowed brains of genius. Insignificant stature in the nature of things is not reconciled to the fact of a giant intellect; they seem incompatible; still, they are only too often thus associated. History shows how frequent men short in stature were wondrous in intellect. Thus, among the short in stature were Archimedes, Attila, Aristotle, Alexander (Magnus Alexander, *corpore parvus erat*), Chrysippus, Diogenes, Epicurus, Epictetus (who was accustomed to call himself a "little man" "Horace, Plato, Lærtes, and Narses. Among the moderns small in stature were Erasmus, George Eliot, Beethoven, Louis Blanc, Gibbon, Haüy, Heine, Goldsmith, Hogarth, Balzac, De Quincey, Linnæus, John Hunter (five feet two inches), Thomas Campbell, Charles Lamb, William Blake (who was scarcely five feet in height),

Meissonier, Mendelssohn, Swineburne, Spinoza, Montaigue, Van Does (called "the drum," because he was not any taller than a drum), Peter Van Laer (called "the puppet"), St. Francis Xavier (four foot and a half), Æsop, Aristomenes, Galba, Pope, Talleyrand, Scott, Owen, Gibbon, Byron, Moses, Mendelssohn, Flaxman, and Hooke were all either rachitic, lame, hunchbacked or club-footed. Pallor and emaciation and a weak and sickly childhood appear to be associated very often with intellectual genius. Indeed, defect and genius are so often coincident with genius as to almost constantly suggest that perfect physical vigor is so rare as to be almost incompatible. The defects of physical construction, lesions particularly of the head and brain, are very frequent among men of genius. Life's heritage to genius seems ever to be in the line of misfortune. Chorea, epilepsy, melancholy, megalomania, Folie du doute, alcoholism, moral insanity, stammering, delayed development, sterility, vagabondage, somnambulism, hyperæsthesia, amnesia, and other neurotic troubles. The influence of cold and heat, general barometric conditions, have not been shown to be so pronounced except when extreme environment, as exemplified in the influence of great cities, has been marked upon the productivity of the genius in literature. Great centers, where the extremes of life are met, have been the begetters of degenerates constantly profound in their influence upon literature. The influence of diet upon the productivity of the genius has not been studied in a systematic way; the energy of the outgo in the brain of a genius has plainly depended upon hypernutrition, and the potential energy of the compounds of food and drink must have a profound influence. Mental activity undoubtedly, in ordinary cases, is a study of nutrition; but in the genius it is closely akin to hypernutrition, and involves the study more of pathological conditions than it does physiological, for excessive activity approaches disease more than it does health. There can be no doubt that the influence of the stronger elements of diet and drink have an immediate influence upon both literature and genius; but the potential values in foods regarding their influence on literature is rather vague. History appears to teach a stronger lesson than science. Shakespeare and his confrères were avowedly strong eaters and drinkers. Temperance appears not to have entered into their special mode of life. Now, if Shakespeare had lived differently in the way of diet and drink, would he have been greater or inferior to what he was? It is highly improbable that diet or drink would have changed his mental product, for the energized brain of a genius has too deep a stamp to be influenced by diet. Such a brain is in the realm of abnormal activity, and if it act at all it must act violently. There can be no doubt that for any kind of activity, mental or physical, good strong diet seems necessary. Dietetic indiscretions have been the one ever and constant failing with the literati of the world, modern and ancient. It is said Byron, when he felt himself in danger of becoming more fat than bard beseems, lived some time on biscuits and soda water, and asked Tom Moore if beefsteaks did not make him ferocious. From the works of these two poets, one would be inclined to conclude that Byron's diet tended more to ferocity that Moore's. Mr. Herbert Spencer, who lived as a vegetarian for a year, is said to have summed up the effect of his diet on his literary productions as follows: "At the end of that year I read over all that I had written during that period and forthwith consigned it *in toto* to the fire."

Balzac attributed much of his wonderful fecundity in literature to coffee. It is stated that in thirty years he wrote forty volumes and drank three hundred thousand cups of coffee. It is very interesting to read what he says. "I have discovered," wrote Balzac, "a horrible and cruel system which I recommend only to men of exceeding vigor, with heavy black hair, a complexion of ochre and vermilion, solid hands, and legs like the balusters of the Place Louis XV. I speak of the use of coffee ground, distilled, cold anhydrous (a chemical term signifying with little or no water), taken fasting. This coffee drops into the stomach, which, as you know from Brillat-Savarin, is a bag of velvety interior, upholstered with papillæ and capillaries. Finding nothing, it attacks this delicate and voluptuous lining; it becomes a sort of nourishment, demanding its juices; it wrings, it compels them like a pythoness adjuring her god; it maltreats those soft walls as a wagoner abuses his young horses. The flexuses inflame, they blaze and send their sparks up to the brain. Then, all at once, everything stirs. Ideas move like the battalions of an army on the eve of battle, and the battle begins. Memories charge with banners displayed; the light horse of comparison deploys in a superb gallop; logic brings up its artillery with carriage boxes and tram; witticisms come as sharpshooters; figures of rhetoric take form; the paper is covered with ink, for the watch begins and ends in torrents of black liquid, as does the battle in its black ammunition. * * * In certain conditions coffee, taken fasting, produces a sort of nervous excitement resembling anger. The voice rises, the gestures express unnatural impatience; all things must succumb to the passing idea."

Perchance the literati of the present are becoming dietetic devotees; but certain it is that in the wonderful past strong drink and foods made many pages throb in words that burn and thoughts which glowed. Environment and not food has been the great force in literature. Great cities have ever been forcible inspirers of intellectual effort, and that, too, with their attendant elements of excess and intemperance. The minds of Shakespeare and Bacon have thrilled and blessed centuries; and if history is to be credited, they were lovers of strong sustenance and ardent elements. Excesses have always and do now abound in the realms of intense mental effort.

ARE MICROBES NECESSARY IN DIGESTION?

Man in his ignorance frequently considers many things in life as useless and superfluous; but, as Voltaire says, the superfluous is a thing highly necessary. From man's standpoint of view, the microbeis often viewed as almost entirely inimical to life; but the great element of cause is not laid open for inspection, and man must content himself to generalizing and theory. The part played by microbes in life, their utility and their purpose, is certainly but little known by man. There has been much discussion indulged in regarding the useful rôle of microbic agency. The part played by microbes in the process of digestion has been a point under discussion, some authorities maintaining that they were not necessary, whilst others maintained that they were necessary. Neucks maintained that digestion could take place without microbes. The experiments of Nuttall and Theirfelder supported this in part by showing that young animals could be

brought up and kept for several days in conditions such that no microbe could penetrate into their intestinal canals and that they were nourished and increased in weight. But Nuttall and Theirfelder neither proved nor asserted that these microbes were useless, but rather the opposite; for animals whose intestines were sterilized grew more slowly than normal animals. In the experiments of Professor Schottelius it was found that in the case of the young fowl bacteria were of great use in digestive work; While digestive ferments exist normally in the intestinal canal, they remain inactive until a secretion of microbes takes place; that regular nutrition only begins when bacteria appears. He asserts from his experiments upon young and growing fowls that the presence of microbes in the intestinal canal is both useful and necessary. His concluding language in the discussion of this theme is thoroughly and impressively stated. Thus, he says: "To sum up, our whole life implies the existence of a state of 'symbrosis' (condition of mutual assistance) with the occupants of our intestinal canal, and we can no longer deny the part they (the microbes) play in digestion. We should measure it and endeavor to aid or restrain it; according to circumstance, to render it hygienic and cause it to contribute to health instead of being the cause of both temporary derangements and chronic disorders, as is now the case."

Diet in Acne.—The regulation of the diet in this troublesome and so often obstinate affection is now generally admitted to be the most important element in the treatment of the disease. Patients themselves will usually have been trying various dietary experiments along with the ordinary home remedies before consulting a physician. Unless, however, the most explicit directions are given as to the proper diet, serious mistakes will be made by patients in the selection of foods, and especially as to its quantity. As Dr. Jackson says, in his manual of diseases of the skin: "The well-to-do are prone to eat too much, and it is remarkable how rapidly their acne will improve by reducing their diet to the simplest elements. In many of them a milk diet, provided milk agrees with them, will accomplish a marked benefit." On the other hand, many young girls almost starve themselves, entertaining the mistaken idea that a low diet will give them a fine complexion. Nothing could well be less true than this. Especially is there a prejudice against butter. The old explanation that skin eruptions were mainly due to the use of too much butter still remains absolutely true for most non-medical people, and even for some medical men. That butter should be used freely, and that codliver oil and iron should be the only drugs required in many cases, as Dr. Jackson insists, would, to these good old conservatives, seem rank heresy. It is evident that more definite ideas as to the diathesis that underlies the etiology of acne have been acquired, and that the dietetic management of it rather than any empiric use of vaunted specifics constitutes the most modern therapeusis of this extremely frequent and bothersome condition.

CLINICAL LECTURE.

MEDICAL CLINIC ON DISEASES OF CHILDREN.[1]

By AUGUSTUS CAILLÉ, M. D., of New York,

Professor of Diseases of Children, Visiting Physician New York Post-Graduate and German Hospitals, Consulting Physician Isabella Home and Hospital, etc.

CASE 1.—*Congenital Lipoma.*—This lady, mother of one of our little patients, asks our opinion as to the nature of a number of small subcutaneous tumors in various parts of her body. They are congenital lipomata, and the fact that they are congenital will enable us to give a favorable prognosis. A lipoma, according to Park, is rarely congenital, except in connection with lymphatic anomalies, but usually develops in adult life. This form of tumor is the commonest and most widely distributed of all tumors that occur in the human body. Save when deeply situated they are easily recognizable, having a dough-like consistence and, when subcutaneous, intimately connected with the overlying skin. In this instance no interference is necessary; if the tumor was situated over the tract of a nerve and gave rise to intense pain or neuralgia, it then should be removed; but as she is not inconvenienced by their presence, I fail to see the rationale of operating.

CASE 2.—*Freputial Adhesions.*—This boy who is now being placed on the table was brought here to be operated upon for phimosis. He has not this condition, but he has epithelial adhesions, which I will ask one of our colleagues to come down and, with this instrument, break them up for us and then draw back the foreskin over the glans penis. The dressing should consist only of boric acid and vaseline.

CASE 3.—*Phimosis.*—Here is a little lad who wets his clothes and his bed, and is looked upon as a general nuisance, all on account of an elongated prepuce. I wish one of the members of the class to come down and perform the operation of circumcision for us. The urine collects under the prepuce, itching follows, the patient then scratches himself, the foreskin becomes reddened and he becomes a bother to himself and his surroundings. This boy has applied at the dispensary for treatment; he was given protective salves, but they failed to relieve him, and so he has consented to have the operation performed. In sewing, I prefer to use black horse-hair, because it can be seen and readily removed.

CASE 3.—*Naso-Pharyngeal Adenoids.*—The reason the mother brings this child here is because it keeps its mouth open at night and snores. This is a clear case of adenoids. They consist of pure lymphoid tissue mixed with connective tissue, and they are essentially hypertrophic growths and not true tumor formations. These patients have a vacuous appearance, with a half-opened mouth; they are sometimes more or less deaf, and they have a nasal voice, often snore loudly at night, and, if the child be young, attacks of choking and night-terrors are not uncommon. Many of these children are treated for bronchitis for weeks or even months until somebody is smart enough to run his finger back in the naso-pharynx,

[1] Held at the Post-Graduate Hospital, New York City, Tuesday, March 28, 1899.

when the true difficulty is found. I shall now introduce a mouth-gag and insert this curette behind the soft palate, using some force in scraping all the adenoid tissue away. The hemorrhage which follows usually ceases in a short time. Before doing this operation on adenoid children inquiries should be instituted regarding the possibility of the hemorrhagic diathesis being present. This operation can be made with or without an anæsthetic. In the nose and throat department it is usually done with an anæsthetic. Removal of adenoids brings on a brisk hemorrhage, and, if no anæsthetic be given, the blood does not so easily get into the larynx and trachea, as may happen when the patient is unconscious.

CASE 4.—*Adenoids of the Naso-Pharynx.*—Here is another case of the same nature as the one just operated upon. I will operate in the same way. If children bleed much after the operation, I find it best to apply alum water to the parts, which is far better than the use of iron preparations; the latter give unpleasant coagula which interfere with the child's comfort. One should caution the parents that if the child should vomit blood a few hours after operation they should not become frightened, as it is generally swallowed blood. The parents should be instructed to continue pouring into the child's nose alum water every hour or two for the first two days, and then to use a salt solution in the same way, three times a day. If one operates in a filthy mouth, as in one with bacteriological diphtheria, one may get a diphtheritic inflammation in the naso-pharynx because the germs are there. If we suspect or know that the mouth is filthy, we should use some antiseptic solution for the nose and throat a week before the operation. Cleanse the naso-pharynx and then you need anticipate no difficulty. Scraping near the opening of the eustachian tube cannot do harm, or at least rarely does harm.

CASE 5.—*Pleuro-Pneumonia With Serous Effusion.*—This child is about one year old and was brought in here last night. The colleague who sent her in did so that an operation for empyema might be performed; he had made a puncture and said he found pus. One of the physicians in the baby's ward also made a puncture and failed to find pus. Now, the question arises, is it a chronic unresolved pneumonia or an empyema that we have to deal with? We will make another puncture and establish the diagnosis. Percussion shows a solid portion, absolutely dull. The finger here demonstrates diminished resonance. In young children the ribs often overlap like shingles and it appears difficult to enter with a needle. I now introduce the needle. The fluid that comes into the barrel of the syringe is perfectly clear. Now, how can we reconcile the two statements made? One colleague puts in needle and finds pus; I put in needle and find a serous effusion; another colleague finds nothing. If we disinfect the syringe with carbolic acid solution and then aspirate the serous fluid, we sometimes get a turbid fluid, due to the action of the carbolic acid on serum; this may be mistaken for pus. I believe the first colleague got a serous fluid which was so acted upon by the carbolic acid, and interpreted as pus. In this case the serous fluid does not require any operative interference for its removal at present.

CASE 6.—*Apex Pneumonia.*—Here is a baby who has a peculiar cough which I wish you all to note. Without an examination of this child I can almost establish the diagnosis of apex pneumonia by its cry. Examina-

tion shows all the typical signs of this condition. Now that you have seen and examined cases of pleuro-pneumonia and apex pneumonia, I will conclude the hour by making a few remarks on pneumonia and its management.

Text-books give many varieties of pneumonia; practically we need divide pneumonias into but two divisions: First, *acute lobar pneumonia* is a disease peculiar to itself; and second, the *catarrhal* or *broncho-pneumonia*, or *capillary bronchitis*, belong to the second group of pneumonias under but one head. Please make this distinction, and keep it before you at all times; for it is of practical importance as regards treatment.

Acute lobar pneumonia is an inflammation of the lung produced *by a specific micro-organism, the pneumococcus;* whereas, broncho-pneumonia, or capillary bronchitis, is due to other forms of cocci. The one is an acute specific disease; the other is usually secondary.

As regards localization, the acute lobar pneumonia may be found in the *apex*, in the *inferior*, *lateral* or *central* portions of the lung. Illustrations of its being localized in the apex is shown in the case presented to you this morning. Associated with this localization there is the peculiar cough or whoop which you have just heard. One may also have a *wandering*, *migratory*, or *creeping* pneumonia—*i. e.*, a pneumonia in the right side to-day, and in a few days may find a typical pneumonia on the other side. The form of pneumonia that frequently puzzles us is the so-called *central form*. A case I saw recently was a boy about eight years of age, who had a high temperature, 106.5°, for five days; there were present some of the clinical symptoms of pneumonia, but no rales or dullness; there was rapid breathing, high temperature and flushed face. All the important organs were examined and found to be free. Could not positively state that it was a pneumonia until the fifth day, when we were able to localize it. Such cases are not rare, and may cause much trouble in diagnosis to the younger men of the profession; they may baffle even older practitioners. When such a pneumonia gets to the surface, all the signs are then characteristic. In central and apex pneumonia high temperature is the rule in children, and they will often be ushered in by convulsions.

Regarding the differential diagnosis, you have seen already how we differentiate between consolidation of the lung and an effusion. The needle does that. Text-books give certain signs and symptoms for distinguishing; but the older we get the better we know that it is frequently impossible to differentiate between these two conditions without the needle.

You have occasionally to differentiate between a consolidated lung (an unresolved pneumonia) and a tuberculous consolidation. That is very difficult in children, because they have no sputum, and you cannot readily find the tubercle bacillus unless you get the sputum. One of the differential points pertain to the temperature. In unresolved pneumonia—after the ninth day—you do not have as high a temperature as you do in tubercular consolidation. There the temperature runs as high as 106° and above, and remains high. In unresolved pneumonia it rarely gets above 103° or 104°. This is not a positive method of making the diagnosis; we must keep in mind the clinical history, the course of the disease, the family history, etc., all of which aids us greatly in distinguishing between these two conditions.

As to the treatment of lobar pneumonia, there is a lurking suspicion in the minds of some of our colleagues that we can abort pneumonia, but I do not believe that it can be done, although the course of the disease may be influenced. If the patient is a syphilitic, then mercury may have some influence; if the patient is infected with plasmodium malariæ, then quinine may be of benefit, particularly in broncho-pneumonia. Lobar pneumonia is due to a specific micro-organism, and we are waiting for the antitoxin which our colleagues across the water say they have found.

Certain drugs have been advocated for the treatment of acute lobar pneumonia, such as the salicylates, veratrum viride, antipyrin, antifebrin, phenacetin, digitalis, etc. These drugs may reduce the temperature for a few hours or strengthen or weaken the heart's action, but the pneumonia will progress notwithstanding. Therefore, I believe that the less drugs we use in acute lobar pneumonia in children the better. If the temperature is not abnormally high, do not give anything but water. You may give hydrochloric acid to aid digestion. If cerebral symptoms develop, and you fear convulsions, you may give phenacetin or antipyrin, the latter dissolved in water and given per rectum. To reduce the temperature mustard baths are useful. Also ice-coil to the head. If the heart becomes flabby, use stimulants early. Suppose a child's temperature drops on the ninth or tenth day, then goes again to 102° or 103°; that means either an unresolved pneumonia or some complication has set in, as a serous effusion or a purulent effusion (empyema).

In the beginning of acute lobar pneumonia, give one dose of calomel, grs. iij to v, and treat symptomatically. If retention of urine occurs, use the catheter. A daily enema should be ordered and a few drops of salt water should be instilled into each nostril four times daily to keep the nasopharynx moist. Administer liquid food, give cool drinks, cool air to breathe, a warm mustard bath or cool wet pack to reduce the temperature and quiet the pain, or else bath at 100° reduced to 80°, using friction. Do not give a cold bath if the feet are cold. If necessary, grs. 3–5 phenacetin may be given at night. Weak children and infants require early stimulation, such as whisky, wine, coffee and such drugs as are found below. There is no routine line of medication, although prescription No. 1 may be given, if it is found desirable to give something. Jackets, poultices and oxygen inhalations are of doubtful value; but a chest compress of cold water every hour or two may be of value. If there be delayed resolution, look for pus and give iodide of potassium prescription, No. 7.

In broncho-pneumonia, or capillary bronchitis, we find the treatment is different from the one just considered. Broncho-pneumonia invades not one single lobe of the lung, but we find it scattered throughout the lung. It may be unilateral or bilateral, or, again, there may be small areas of pneumonic consolidations which, if you are expert enough, you may detect by physical examination. There are often atelectatic foci. In young children and in old people a broncho-pneumonia is a dangerous disease. Stimulate early and give expectorants. In malaria with broncho-pneumonia, quinine and whisky is a good combination to give; and I am often surprised at the good results obtained in children and in adults. In broncho-pneumonia the treatment is *active*, not *expectant*. Prescription No. 7 is particularly adapted to this form and has the power of

liquefying the secretions. Camphor by the mouth, administered with sugar or chocolate, or hypodermatically camphorated oil and ether, half and half, makes an excellent stimulant. The double salt of caffein and benzoate of sodium is a very good stimulant. The stimulants usually employed are Nos. 2, 3, 4, 5, 6, 8. In urgent case, artificial respiration and cold douches may be given. It is a good plan to isolate patients, for we often find one, two, or three patients in one family; I believe pneumonia is mildly contagious. It is also a good plan to change the patient from one room into another. The air in the room should often be changed. Another point of value is the little trick of raising the foot of the bed; some patients are so weak that they are unable to expectorate or expel the mucus; by raising lower end of bed, we can utilize gravity with good effect. This mechanical device allows the secretions to get out and so facilitates the clearing of the air passages, and is well worth remembering. Artificial respiration may sometimes save life. Regarding the question of venesection, I should like to say that I firmly believe in its value in adults and in selected cases.

FORMULÆ.

No. 1. ℞ Ess. of pepsin ..... ℥ ij
Acid muriat. dilut ..... ℥ j
M. Sig.—Teaspoonful four times a day.

No. 2. ℞ Ol. camphor,
Ether pur ..... aa ℥ ij
M. Sig.—Gtts. x–xxx hypodermatically.

No. 3. ℞ Camphoræ ..... gr. j
Pulv. digitalis ..... gr. j
Acid benzoic ..... gr iij
Chocolad ..... gr. v
M. Sig.—One powder every three hours.

No. 4 ℞ Tablet triturates of strychnia ..... gr. 1-50–1-100

No. 5. ℞ Tablet triturates nitro-glycerine ..... gr. 1-100

No. 6. ℞ Antipyrin or phenacetin with caffein.

No. 7. ℞ Potassii iodidi ..... ℥ ij
Aquæ ..... ℥ ijss
Liq. ammon ..... ℥ j
Syrupi ..... ℥ ss
M. Sig.—Teaspoonful four times a day.

No. 8. ℞ Caffein et sodii benzoat ..... gr. 1–5
Sig.—In water, by mouth or subcutaneously.

ORIGINAL ARTICLES.

THE GREAT BELLS OF EDINBURGH.

By Joseph Bell, F. R. C. S., of Edinburgh, Scotland.

THE BELLS of Edinburgh have won a reputation as a medical and surgical family of considerable mark, and we find the name often mentioned along with Munros and Woods, as illustrating the possibility of the hereditary transmission of certain qualities which tend to success or even eminence in certain walks of life. Three of the name were specially distinguished in their various spheres. *Benjamin*, the author of the great treatise on systematic surgery, in seven volumes, which passed through many editions and which was translated into foreign languages. *John*, the brilliant operating surgeon and clinician, whose literary power and remarkable imagination gave his records of his surgical cases all the interest of brilliant fiction. *Charles*, also a surgeon at heart and by profession, but who will be remembered so long as medical science lasts by his magnificent contributions to the physiology of the nervous system. His is the name associated with the respiratory nerve, and with Bell's palsy.

The stock from which all were originally descended was a border clan, well known in the battles and clan feuds which always devastated the Scottish border. Their ancient peel or tower of Blacket still stands in the parish of Middlebie, on a slope of land partly surrounded by the windings of the Kirtle, a river renowned in Scottish song. The breed was a dour and strenuous one, described in local acts and warrants as Robbers and Rievers, always ready for a fray, either against the English or against a neighboring clan. On the lintel of the old tower we can still see the smooth surface of the stone on which they sharpened their swords, and within a bow-shot of the door is the memorial stone to the chief of another clan, shot by the Bell of that day from his castle door.

The castle and new house have passed into other hands, but the country side is full of legends and the kirkyards of graves and quaint epitaphs which keep the memory of the old freebooters fairly green.

Benjamin Bell was, in his day, the representative of the clan, and in his biography (written by his grandson, Benjamin Bell, the father of the writer of this little sketch) are many interesting tales of his ancestors. They were always men with opinions of their own. The laird in 1662, though a decent man, in that he was not a freebooter, was a zealous Covenanter, and as such was called a rebel; pardoned in 1662 by the Act of Indemnity, but heavily fined. He was the great-grandfather of the surgeon. The grandfather was a successful cattle breeder, married a Gra-

ham from Cumberland, and left his cattle and his acres to his son George, born in 1722, who was the father of Benjamin. The mother of the future surgeon was Anne Corrie, of Speddoch, a remarkable woman, who survived her husband after a married life of nearly seventy years. She was a worthy descendant of her great-grandfather, Alexander Gordon, of Earlston, long a prisoner in the Bass Rock for his adhesion to the Covenant, and of his wife, a daughter of Sir Thomas Hamilton, of Preston, also a zealous Covenanter, who fought at Dunbar and Worcester.

The mingled strain of border rievers and stern Puritans and Covenanters was not a bad one to produce hard-bitten, long-headed Scotsmen. Benjamin was born at Dumfries, in 1749. He was the second child and eldest son of a family of fifteen children. He received an excellent classical education at the grammar school of Dumfries, and in 1766 entered the Medical School of Edinburgh. The Munros (first and second), Black, Cullen, Gregory and Hope, were then among the teachers. After the usual studies, in his case devoted specially to the surgical side of the profession, and after residence as clerk or house surgeon in the Royal Infirmary for two years, he was admitted a Fellow of the Royal College of Surgeons on April 5, 1771, and immediately went off to study surgery, both in Paris and London. When in Paris he and his great friend, James Hamilton, lived with and studied under Baron Portal, the famous surgeon. On his return, in 1772, he was appointed one of the surgeons to the Royal Infirmary, and held office in that great institution for twenty-nine years.

He quickly settled in practice in Edinburgh, married Grizel Hamilton, the only sister of his friend James, and after the usual delays and anxieties of a young surgeon began to build up a large practice. A fall from horseback, however, caused such serious injuries that for a year or two he had to give up work and live at a farm-house in the country. This enforced leisure was not wasted, as soon after his recovery, in 1778, he published his first surgical work of importance on ulcers and joint diseases. From this date his life was one of unvarying labor and success. Between 1783 and 1788 he published his great work on surgery, in seven volumes, which by 1801 had reached a seventh edition.

Though bald in style, and at times tedious, its teaching was much in advance of anything published at that time. It contains bold speculations and indications that operative interferences unknown till nearly a century later had been meditated in the author's mind. We have no indication that he ever was a brilliant operator, but a safe and trusted surgeon he certainly was. One of his apprentices who lived to a great age, mentioned that at one time in Scotland the saying was "that no one could die contented without having seen Benjamin Bell."

Apart from his surgery he was a man of great common sense and sagacity, an excellent practical farmer, a bold and successful speculator in landed estate; in many ways a man much in advance of his age. He died of a wasting illness, interfering with his digestion, at Newington House, near Edinburgh, on August 5, 1806, at the comparatively early age of fifty-seven.

Two of his sons followed his footsteps and adopted the surgical branch of the profession. George, the elder one, was a very brillianl operator, especially for stone, and was well known in the south of Scot-

land and north of England as a consultant. Joseph, the youngest son, studied both in Edinburgh and London, assisted his brother George in his surgical work, and practiced for many years as a most highly-respected general practitioner in Edinburgh. George had two sons in the profession—one, Benjamin, a young man of great promise, wrote a work on "Diseases of the Bones;" the other, George, was a well-known philanthropist. Joseph brough up his eldest son, Benjamin, to carry on the family tradition; but it is hardly suitable for the present writer, who again is his son, to pronounce a panegyric on his father, for to tell the truth about him would inevitably seem fulsome praise.

John Bell.—He was the grandson of the minister of Gladsmuir, in East Lothian, who was almost certainly a descendant of the older branch of Blacket, of which Benjamin was the representative. John's father was the Rev. Wm. Bell, who, though a son of the East Lothian manse, joined the Episcopal Church in Scotland, and afterwards became the minister of the Episcopalian church in Edinburgh. He married Miss Morrice, the granddaughter of Bishop White, and of the eight children of the marriage, four attained to eminence in their respective professions: two were lawyers and two medical men. John, the second son, was born in 1763, was educated at the high school of Edinburgh, and then began his medical studies as the pupil of Dr. Alexander Wood, the famous "lang Sandy." He studied anatomy under the second Munro, and, seeing the important bearing of anatomy on operative surgery, devoted special attention to that branch of medical science. After finishing his medical studies and traveling in Russia and northern Europe, he began to lecture on anatomy and surgery in a theater he built for himself in Surgeon square in 1790. He published "Dissections" and several volumes on surgery between 1793 and 1806. He performed many brilliant operations, and described them in language of hyperbole. He was in constant hot water, having controversies with the University, the Infirmary managers, Dr. Gregory, and others. He spent a good deal of force in abusing Mr. Benjamin Bell, and seems to have been a clever controversialist, often appearing to have the best of arguments, spoiled by fierceness of abuse and extravagance of language. The calm, shrewd, and successful opponents, such as Doctor Gregory and Benjamin Bell, had the confidence of the public. John Bell, with probably more genius and greater operative dexterity, seemed to want the ballast and common sense needed to carry a man safely through the world. He made a good deal of money, but spent it all and more, and was often in difficulties. In 1816 he fell from his horse and received injuries from which he never completely recovered. He traveled on the continent, became dropsical, and died at Rome in the fifty-seventh year of his age, on April 15, 1820. In nearly every other way the antithesis of Benjamin, he resembled him in his devotion to surgery and in his comparatively early death.

John Bell's great quarto volumes are delightful reading, and some of his cases are most graphically described: "The famous leech-catcher, who had an aneurism (probably gluteal) of prodigious size. It was opened by an incision eight inches in length, from which the blood was thrown out with great violence and with a 'whishing' noise; the assistants were covered with it. Twenty hands were about the tumor, and the bag

(sac) was filled with sponges and cloths of all kinds. The patient fell down, his arms fell lifeless and without pulse over the side of the table, his head hung down, his face was livid, he uttered two or three heavy groans, and we believed him dead. I ran the bistoury upwards and downwards, and at once made my incision *two feet* in length," etc.—Vol. I., pp. 422–3.

Most entertaining reading, truly, but we fear many of the details of the cases must be taken with the proverbial pinch of salt.

Sir Charles Bell.—He was born in Edinburgh in 1778. He was the youngest brother of John Bell; was, like him, educated at the high school. He had the enormous advantage of assisting his brother in his anatomical teaching, and while still a minor was lecturing to hundreds of pupils. He became a member of the College of Surgeons in 1799. In 1806, after having served some years in the wards of the Edinburgh Royal Infirmary, he went to London, lecturing on anatomy and surgery for some years along with Mr. James Wilson. In 1814 he was elected surgeon to the Middlesex Hospital, where he soon made himself famous as a clinical teacher, lecturing there from 1814 to 1836. Not only was he one of the strongest members of the teaching staff, but he also interested himself in the administration and worked hard for its prosperity.

He did much excellent work along with his brother John on the relation of anatomy to surgery, and also published splendid illustrations of the great operations of surgery. His zeal for operative surgery, especially in its relation to gunshot wounds, was so great that he twice left his lucrative practice in London to work on the wounded in the field. After Corunna he met the transports which landed the wounded on the south coast of England; and after Waterloo he was put in charge of a hospital and treated three hundred men. He was an admirable draughtsman and an adept in oil and water-color painting, and his original paintings of the wounded after Waterloo adorn the walls of the Royal College of Surgeons Museum in Edinburgh. One, of a case of opisthotonos in severe tetanus, is one of the most perfect illustrations of the malady ever depicted. His "Institutes of Surgery," in two volumes, is a very interesting and valuable work. Some of the cases recorded in it, and the lessons drawn from them, are so well described and neatly and effectively put as to be well worth perusal.

Charles was a great surgeon, but he was a much greater physiological anatomist. His magnificent discovery of the motor and sensory branches of the nerves, and his masterly pamphlet on the "Idea of a New Anatomy of the Brain," put him at once on the list of the great discoverers in science.

His name is associated with two minor facts in physiology and pathology—the external respiratory nerve of Bell, and Bell's palsy. He was one of those who could make the facts and inferences of science popular and easy to be understood, as is proved by his "Dissertations on Animal Mechanics" and his masterly Bridgewater treatise on "The Hand: Its Mechanism and Vital Endowments as Evincing Design."

Knighted in 1831, he returned to his native country and to Edinburgh, from which he had been absent for thirty years, in 1836, as professor of surgery in the University of Edinburgh. He held the chair and

maintained its dignity for six years, but died suddenly of an attack of angina pectoris on April 28, 1842, at Hallow Park, near Worcester, where he had been visiting Mrs. Holland. He lies buried in Hallow churchyard.

It is seldom a man attains to eminence in two branches of the profession. Had he not been greater as a physiologist, Charles Bell would have been remembered as an enthusiastic and successful teacher of surgery.

Not a bad record for one wild Scottish border clan to have given to the world, in one generation, three men of commanding eminence in their varied branches of the profession.

TOXICOLOGICAL CHEMISTRY IN GASTRIC DISEASES.[1]

By JOHN ZAHORSKY, A. B., M. D., of St. Louis,

Assistant to the chair of Pediatrics, Missouri Medical College; House Physician to the Bethesda Foundlings' Home and Episcopal Orphans' Home.

TOXICOLOGICAL chemistry in gastric diseases is almost at a stand-still before a multitude of complex and obscure organic molecular combinations. Recent investigations have not garnered any truths in regard to this subject that have not been foreshadowed in certain deductions made by clinicians more than a decade ago. But however meager in specific discoveries, the enormous variety of poisonous substances which play a definite pathogenetic rôle has been sufficiently studied, so that an attempt at classification is to a certain extent expedient. Very few chemical substances have yet been isolated, and terms to designate them are, therefore, not coined.

Gastric poisons may be classified: *first*, according to their origin; *second*, according to their chemical composition; *third*, according to their special activity—that is, local or general; *fourth*, according to their relationship with foods and digestion. The poisons which directly by ingestion may cause disease of the stomach may be divided into mineral, animal, vegetable and bacterial poisons.

The mineral poisons need only be referred to. Their number is very large, and include mostly the corrosive chemicals—as, for example, arsenic, corrosive sublimate, antimony and the mineral acids. By their ingestion in sufficient doses, severe grades of toxic gastritis are produced, the concentrated mineral acid producing, perhaps, the most severe morbid changes.

[1] Read before the Missouri Medical College Alumni Association, March 9, 1899.

The vegetable kingdom furnishes a large number of poisons which, when swallowed, cause gastric symptoms, and even inflammatory disease. For example, I will mention oxalic, acetic and pyrogallic acids. Certain resinous compounds act similarly, as colocynth. Capsicum in large doses produces violent irritation. Certain alkaloids can produce gastric irritation, as muscarine or colchicine.

The toxic compounds from this source are so numerous that a further consideration must be deferred.

Poisons that have an animal origin have recently come into prominence, particularly through the studies of Gautier, who called them leucomains. Still, besides alkaloids to which this term is applied, other chemical compounds, as acids, proteoses, glucosides, etc., derive their genesis from the physiological or pathological activity of animal tissue cells. Their formation may occur in animals which serve as food for man, or they may be formed in the human body and excreted by the stomach. Thus the blood of the common eel, or conger eel, contains a violent albuminous poison which induces intense irritation of the stomach followed by diarrhœa. It burns the tongue like phosphorus. Mosso has named this icthyotoxicum.

Mytilotoxin, extracted from poisonous mussels, is a leucomain having the power of causing dangerous general symptoms. But some mussels contain a poison which acts as very effective gastric irritant.

These toxins from certain classes of fish give rise to symptoms referable to the stomach, and some are followed also by severe semiotic phenomena. Under this class belongs the disease which is called signatera by the Spaniards. Kobert has studied these poisons and finds they are leucomains and tissue toxins, their source being certain glands in the skin, fins, tail or gills of these fishes.

Too little attention has been given to the excretion of leucomains by the gastric mucous membrane. On the skin a great variety of lesions may occur, due to substances circulating in the skin or excreted by some of its glands. The stomach also has the power of excretion; and thus toxic material may find its way in the gastric cavity. Particularly in ulcer of the stomach the presumption is strong that irritating leucomains are excreted and produce an eruption, so to speak, on the surface of its lining. This is digested by the hyperchlorhydria. It is difficult to account for the periodic crises, the excessive hyperæsthesia, and the slow process of repair on any other hypothesis. In one case of gastric ulcer under my observation, uric acid and urea were found in large quantities in the vomitus. Creatinin has also been found; and that the more poisonous compounds of the xanthin series may be found is a logical corollary. Evidence is accumulating more and more to show that at least some gastric ulcers are caused by excreted leucomains.

The vomiting in Bright's disease and hysterical or toxic anuria seems also to depend on irritating excretory substance discharged into the gastric cavity. In these diseases metabolic products of a poisonous character are common. Of course, it must be admitted that the poisonous leucomains act on the cerebral and spinal centers and centrifugally cause vomiting, but yet the local irritation is also a fact.

Bacterial poisons also have an important place in the etiology of

gastric disease. These may be divided into the endogenic and ectogenic. The former are produced by the microbic activity in the food after ingestion, or in the gastric secretions, or even in the tissue of the gastric wall.

The ectogenic poisons are those formed in a great variety of foods previous to their ingestion by toxicogenic bacteria. A very large number of these have already been isolated and belong mostly to the ptomains. Such is tyrotoxicon, the alkaloid in poisonous cheese and milk; butilotoxin, the alkaloid in meat and sausage poisoning produced by the bacillus botulinus.

Similarly produced are muscarine and cadavarine. All these poisons cause a violent gastro-enteritis, and to the practitioner have a most important practical significance. Fortunately, a large variety of toxal bumoses, formed in the decomposition of proteids, are harmless when taken into the stomach, as the gastric and pancreatic juices speedily destroy their harmful activity. Only in specially predisposed individuals do symptoms arise from them.

The endogenic toxins in gastric diseases have been the source of considerable investigation and discussion. Bouchard had pointed out long ago that stagnation of the gastric contents, as in gastrectasia, is accompanied by the formation of poisons through bacterial growth. The whole train of symptoms, such as nausea, vomiting, headache, backache, languor, drowsiness, insomnia, irritability, offensive breath, coated tongue, and bad taste in the mouth could only receive a rational explanation by the theory of toxin formation in the stomach. A great variety of experiments have been made, and it has been shown that, even in the absence of hydrochloric acid, albuminoids do not undergo extensive putrefaction in the stomach. The reason for this is analogous to the fact that the proteids in milk do not readily putrefy, namely, the carbohydrates and hydrocarbons ingested with the proteids are first decomposed and form acids, which are not toxic and yet prevent the growth of saprophytes. These acids are lactic acid, which is found particularly in carcinoma ventriculi; acetic acid, which is the important digestant in gastro malacia; butyric acid, and the higher fatty acids. All these produce local irritation but no general symptoms. Still, Bouchard's deductions in the main are correct. Sulphureted hydrogen has been demonstrated several times when large quantities of proteids and no carbohydrates foods were taken. A very interesting decomposition product is acetone. This has been found several times.

This suggests that it may be etiologically related to gastric coma, as this chemical is also found in diabetic coma. Since we know that acetone does not induce coma, even in large doses, the causal relationship cannot be direct.

Tetany has been discovered very frequently associated with gastric dilatation. It was presumed *a priori* that some physiologically active substance is generated in the stomach, and being absorbed is followed by this phenomenon. Painstaking researches have led to contradictory results. Thus, Bourveret and Devic found a toxic substance in an extract from the contents of a dilated stomach, which, injected into small animals, produced tetanoid attacks. It was identified as a peptotoxin, similar to that discovered by Brieger. Salkowski and others have not been able to confirm these

results. Yet it must be remembered that it is almost impossible to obtain the same conditions in such experiments.

In acute stagnation of the gastric contents milder forms of toxic material are frequent. It is probable, too, that excessive peptonization in the stomach from hyperchlorhydria or motor insufficiency, by the production of a large quantity of amphopeptone, may produce distress, vomiting, and subsequent intestinal irritation, and even decomposition. The fact that etheral sulphates are in excess in hyperchlorhydria corroborates this view.

The toxins produced by the activity of bacteria in the wall of the stomach are similar to those produced at other sites—tuberculin from a tuberculous ulcer, pyrotoxin from phlegmonous gastritis, and unknown toxins from cancer. The toxicological chemistry would be incomplete without pointing out that toxalbumins originating at various points in the body and circulating in the blood may cause a variety of gastric lesions. According to Flexner's brilliant experiments, toxalbumins such as ricin and abrin cause necrosis of the lymph follicles in the stomach. A few months ago I observed post-mortem multiple ulcerations of the gastric lining, induced by a coagulation necrosis of the lymph follicles, and following hæmonhogic disease of the new-born. The hæmorrhagic gastritis following scarlet fever, diphtheria, enteric fever, and Bright's disease has a similar causation. In chronic suppuration the amyloid degeneration of the blood vessels must also be ascribed to a toxin the nature of which is unknown. Thus it is seen that the toxicological chemistry in gastric diseases is assuming immense proportions, and the last word will not be said for some time.

PEDICULOSIS.

By A. H. OHMANN-DUMESNIL, St. Louis.

PEDICULOSIS, phthiriasis, or lousiness, is not as common an affection in this country as it is in Europe, where as great a degree of cleanliness does not exist as here, and where the population is more huddled together under unsanitary conditions and with environments in squalor. Of course, it is among the poorer classes, in all countries that the affection is principally observed. It has been a saying that "misery loves company," but the same may be said with equal truth of the animal parasites of the skin. They are much attached to their human hosts, and it is often with much difficulty that they can be dislodged. There are three varieties of pediculi, each of which will be considered separately, as they differ not only in appearance, but in their characteristics and the localities they infest. They are the pediculus capitis, the pediculus corporis, and the pediculus pubis.

PREDICULUS CAPITIS.—This trouble, also known as phthiriasis capitis, is one which is sufficiently common in this country to attract attention. And, as a matter of fact, the very circumstance of its not being a very common affection awakens much more interest in any given case than the same would in Europe, where lousiness is not only of ordinary but of

frequent occurrence. Pediculosis capitis is by no means a difficult matter. A little care exercised in making an examination will enable one to easily reach a diagnosis, because the parasite can be easily seen as well as its ova. In an ordinary case of this affection the patient complains of itching of the scalp. This sensation is not confined to any one point in particular, but seems to shift and change its location continually, occasionally occurring at several points at one and the same time. In such cases a moderate degree of scratching temporarily relieves the pruritus. But in a few moments the pruritus recurs; and it may be said to be incessant, with a few moments of rest continually occurring. When the parasites are numerous the itching is proportionately well marked. The presence of lice in the head was at one time considered a sign of health, and erroneously were the parasites supposed to produce health; whereas, the truth is, that they will not infest an unhealthy individual, or one with disease, as they are voracious and seem to be rather particular in regard to the quality of the food they devour. In pediculosis capitis the hairy scalp alone is affected, the pediculi confining themselves to this area exclusively. To find the little pests it is usually best to part the hair, as the former limit their roamings to the integumentary surface as a general thing. Upon the hairs will be found "nits," or ova, tightly glued to the shaft, and presenting the appearance of minute white bodies or nodes. Under a magnifying glass it can be seen that the glutinous material which holds the ovum to the hair is thrown around the latter so as to form a collar and extending for some small distance, thus insuring stability. It is on this account that nits are removed with difficulty.

When this form of pediculosis has existed for some time the multiplication of the pediculi, which is quite rapid, will have become so great, and the consequent irritation and itching so marked, that scratching is more severe in character. As a natural consequence, a more or less pronounced dermatitis is set up, which will vary in the severity of its character in different individuals. It is very apt to be multiform in its appearance, papules, pustules, and excoriations existing in various proportions, and accompanied by a glairy exudation which tends to agglutinate the hair. Fermentative changes set in and they are attended by a disagreeable, fetid odor of a more or less sour smell. Add to this the accumulation of extraneous matter, and the condition of extreme filth which is presented can be better imagined than described. As a result of scratching low down on the occiput and on the sinciput, we have the pruritus extended for some distance down the neck, and the efforts made to relieve this produce excoriations and crusts of a dirty color. This condition is known as porrigo ὃ pediculis, and is well shown in Figure 1. The site of predilection of the pediculus capitis is the occiput, the vertex, the temples also being favored spots. Whilst the parasites are more frequently observed in those having long hair, they are often seen in those who keep the hair trimmed short. Pediculosis capitis is seen at all ages, and may be easily acquired by those of cleanly habits who may accidently come in contact with the persons, clothing, or bedding of individuals afflicted with the trouble. Street cars, sleeping coaches, railway carriages, cabs, and the public conveyances are a frequent source of contamination. In former times, when hair cutting was not enforced, armies were notoriously affected by

pediculi. Modern methods of enforced cleanliness have reduced this, and as campaigns are usually of short duration, pediculosis is no longer observed to exist to the extent that it formerly did.

The pediculus capitis, or head-louse, is grayish in color and of an elongated ovalish form. The female is somewhat larger than the male, the size in general varying from $\frac{2}{3}'''$ to $1\frac{1}{2}'''$ in length, and about one-half of this in breadth. The head is somewhat acorn-shaped, provided with

FIG. 1. Porrigo e Pediculus.

distinct eyes, and with five-jointed antennæ, as shown in Figure 2. The legs, which are attached to the thorax, are six in number. They have four joints exclusive of the claw with which each one terminates. The legs and body are provided with fine hairs, which can be distinctly made out under the microscope. Strong mandibles exist, and they are of sufficient strength to enable the parasite to drive them through the stratum

corneum of the epidermis down to the rete malpighii, from which it derives its sustenance in the form of blood. The claws at the extremities of the legs are essentially intended for prehension. Assisting in locomotion, they are of great value to grasp the hair, rendering the position more firm and enabling the parasite to more successfully oppose efforts to dislodge it. They also afford the female greater security of position when laying her eggs. The habitat of the pediculus capitis is the scalp. The female, however, can be frequently found upon the hairs, where she goes to deposit and attach the ova for incubation. The ovum, or "nit," is a whitish, oval or pyriform body about $\frac{1}{4}'''$ in length, and distinctly visible to the naked eye. As stated above, it is attached to the hair by a peculiar glutinous substance, the upper portion being that through which the young pediculus emerges. One or more ova may be attached to the same hair, and they are not necessarily of the same age. This can be easily demonstrated by microscopic examination, which will show them to contain embryos in different stages of development. The period of incubation

FIG. 2. Pediculus Capitis—(Male)—(Photomicrograph from Specimen).

varies from six days to a week, and the females are very prolific, nearly all their time being occupied in laying eggs. It may be readily seen from this what an enormous multiplication of the parasite is possible in the course of a very few weeks.

The treatment of pediculosis capitis must not only be curative, but preventive. It is absolutely necessary, in order to obtain a permanent release from the pests, to remove all causes of possible contagion. The means to ensure these conditions must be carefully carried out, and not neglected at any time. Individuals similarly affected are to be avoided. All head-coverings should be subjected to a process which will effectually destroy the parasites and their ova. Combs and hair-brushes must be thoroughly cleansed each time after being used, and no other individual should be permitted to use them any more than hats, caps, or similar articles of dress worn by one who has the affection. In the cases of males who have pediculi of the head, the curative treatment is a comparatively

simple matter. The hair is to be clipped very close and thus afford an opportunity of making applications thoroughly and to every part of the scalp. All ointments should be avoided, as they are disagreeable to use, greasy, and give a general feeling of discomfort, besides soiling wearing apparel, especially in children, as they will scratch and transfer the ointment on their fingers to the clothing. On the other hand, liquid preparations are more agreeable and cleanly, and can be applied more thoroughly. In the case of females with long hair a more complicated condition presents itself if cutting it off meets with objections. The hairs are frequently thickly studded with ova, and these must be gotten rid of *pari passu* with the destruction of the pediculi. To accomplish this purpose a thorough shampoo with sapo viridis is unexcelled, as this agent dissolves the nits and most thoroughly cleanses the hair. After the hair and scalp have been thoroughly dried, any one of a number of remedies may be employed.

Among the curative agents which have met with success may be mentioned one which is quite popular in Russia, not only for pediculosis, but for scabies as well. It is benzine, and must be well applied. It is but slightly painful; its disagreeable odor, however, will always limit its use. In this country coal oil is popular with the lower classes, and much used for this purpose. The disadvantage under which it suffers is that it is often followed by a dermatitis of a marked character which takes on an eczematous character. Among the highly lauded preparations are to be mentioned a solution of bichloride of mercury varying in strength from one in a thousand to one in five thousand. The infusion of staphisagria or stavesacre is also a favorite in popular medicine; it should be very thoroughly applied. In the use of all these it is well to wash the scalp thoroughly with sapoderm and water previous to each application; and this applies to all the other preparations which may be used for the destruction of pediculi. An eight per cent. solution of kreolin is claimed to be efficient. A six per cent. solution of carbolic acid is an effective lotion in pediculosis; but it usually permits the ova to hatch and a new crop of parasites to appear. One of the best remedies to employ for this purpose is campho-phénique, which not only kills the parasite and destroys the ova rapidly, but has the further beneficial effect of acting as a vulnerary on the secondary lesions which have been brought on by scratching. It may be used two or three times daily, but the scalp must be well dried previous to each application. The principal point to observe, no matter what the measures are which are adopted, is to be certain that the treatment is thorough. This implies not only the proper application of the remedy to the affected parts so as to reach every point, but also a frequency sufficient to accomplish completely the intended purpose, and not such an one as will permit of relapses through the successful hatching of undestroyed ova.

PEDICULUS CORPORIS.—Pediculosis corporis is an affection produced by the pediculus corporis, or pediculus vestimenti, the latter being, perhaps, the more appropriate name. This parasite is the familiar "gray-back" of our civil war, when it was prevalent to quite a marked extent. It is commonly enough seen under those circumstances in which masses of individuals are closely congregated and have no opportunities or inclinations to keep themselves and their clothing clean. Soldiers who are in camp for any length of time, laborers who live in camps, several occupy-

ing a small tent, the dwellers of tenement houses of the lower class, and similar individuals, appear to be particularly prone to be infected by the body-louse. As a rule, it is adults who are most apt to become the host of this parasite, and men more frequently than women. The itching which occurs is intolerable, and is most severe about the shoulders and sides of the body. However, the limbs and entire trunk are often the seat of this intense pruritus. The head is never attacked, and this is easily understood directly it is considered that the habitat of the pediculus corporis is the seams of the clothing next the body and not the integument. The lesions presented upon the body which are the result of the depredations of the parasite are almost pathognomonic of the trouble, and, when found, should always lead to a most careful examination of the clothing worn next to the skin. The objective phenomena which are seen consist of secondary lesions, and these are, for the most part, excoriations of a marked character, four to six inches in length, and occur as several in

FIG. 3. Pediculus Corporis—(Female)—(Photomicrograph from Specimen).

number parallel to one another. They are caused by violent scratching, and occur in those portions most accessible to the finger-nails, viz.: the scapular regions, the flanks, the buttocks, the outer surfaces of the thighs, etc. The scratching is so severe at times as to produce bleeding and resulting crusts. If cutaneous tissues have been destroyed to any appreciable depth, shallow ulcers will form. The underwear will adhere to the denuded patches, and its removal will cause fresh bleeding, accompanied by pain. When a case has progressed thus far the arms and legs will share in the involvement, and the spectacle presented by a patient in this condition is that of a most miserable and forlorn being. Among the modifications observed in the objective symptoms occurring in pediculosis corporis is the presence of short and jagged scratch marks, due to digging of the nails into the integument. Another condition is seen which should not be hastily misjudged. This consists in a pigmentation of a light or dark-brown color, at first disseminated in macules of different sizes. In cases

of long standing the pigmentation becomes diffuse and involves the entire integument which has been subjected to the depredations of the parasites. In tramps and such individuals it is black and has acquired the name of "vagabond's disease." It is quite marked in character and is in keeping with the generally filthy appearance of the individual so affected.

The pediculus corporis is the largest of the pediculi. It sometimes attains comparatively enormous proportions, and it is very voracious, abstracting the blood of its host quite freely and in amounts that are relatively large. It is stoutly built, the female being considerably larger than the male. It varies in size from $\frac{3}{4}'''$ to $2'''$ or even more in length, being about one-third as broad. In color it is a dirty gray, which becomes of a reddish tinge after gorging with blood. The female is much broader than the male at the abdomen, on account of the ova which it must contain. She may be easily distinguished from the male by the notch which exists at the distal extremity of the abdomen, as is shown in Figure 3[1]. This parasite is provided with six strong, four-jointed legs, having claws at their extremities and provided with hairs. The abdomen has seven well-defined notches on either side. The head is large and somewhat acorn-shaped, the eyes being quite prominent. The antennæ are quite strong, five-jointed and very mobile. The mandibles are unusually powerful and easily cut the integument of the host. As mentioned above, the parasites live in the seams of the clothing, and it is here that the female deposits her ova, which hatch in five or six days. It is stated, upon very good authority, that in eighteen days the young lice will reproduce. When the parasite desires food it will roam over the skin, and for this reason but very few are found outside the clothing. They can be easily shaken from the skin, and thus fall to the ground and soon gain new hosts.

The treatment of this condition is a very simple matter in principle, but rather difficult to carry out successfully in actual practice. It is to be divided into two parts—the treatment of the patient and that of his clothing. A good, thorough bath and the destruction of the clothing is certainly not a very difficult matter to order; but, unfortunately, it cannot always be carried out in every instance. What can be done, however—and, if it be thoroughly done, will result in success—is to adapt the means to be employed to the conditions which are presented. The treatment of the patient should consist in the thorough application of liquid camphophénique to the entire affected surface. This remedy not only kills whatever parasites may be lurking on the skin, but it also acts as an antiseptic and vulnerary, promoting a rapid healing of the dermatitis which has been excited by the scratching. Washing thoroughly with sapodermin and then applying a 1 to 1000 solution of bichloride of mercury is also a good plan. No method, however, will prove effective unless uninfected clothing be assumed after it has been employed. If, as is frequently the case, the patient has no change of clothing and underwear, the parasites should be picked out of the clothing and killed, a procedure which is quite easy, as the pediculi are found with but little trouble. To insure the destruction of the ova it is absolutely necessary to subject the clothing to a high degree of heat. After having done this, it is advantageous to soak the

[1] In this figure the ova in the abdomen can be clearly distinguished.

various articles of wear in a fairly strong alkaline solution, boil, and then thoroughly wash. Such a course will rid a patient completely of these parasites. But, unless he avoids those persons or localities where body lice flourish, he will acquire them again. Occasionally they may be accidentally picked up, as in the case of head lice, in public conveyances, or in unclean hotels, boarding-houses, or lodging-houses especially; in fact, wherever perfect cleanliness does not prevail, or where all sorts and conditions of individuals may congregate or occupy furniture which is, in turn, occupied by others.

PEDICULUS PUBIS.—Pediculus pubis is an affection more frequently observed in males than in females; the latter, no doubt, getting rid of the parasite without applying for medical aid. This is equally true in the case of the former. The trouble manifests itself by an intense itching about the mons veneris, and scratching does not seem to allay it by any means. Beginning with fugitive sensations of pruritus, this symptom after a short time becomes incessant and well-nigh intolerable. Should it be permitted to go on untreated for a protracted length of time, the itching ceases entirely or almost so, although the parasites will continue to

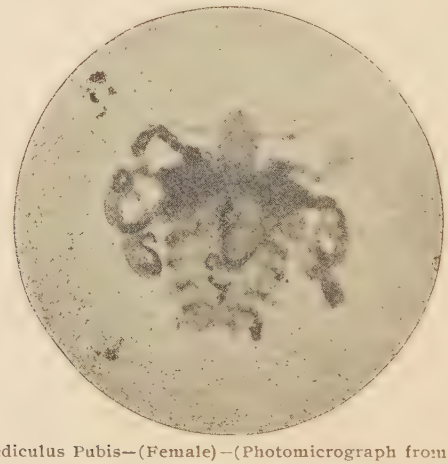

FIG. 4. Pediculus Pubis—(Female)—(Photomicrograph from Specimen).

increase in numbers. The trouble is not entirely limited to the pubic region. Pediculosis pubis may occur wherever there exist coarse or stout hairs, and it may affect individuals at all ages, from infancy to old age. It is not infrequently found that the parasite clings to the hairs of the legs, if these be at all coarser than the ordinary lanugo hairs. The hair on the chest and of the axillæ also afford a convenient *nidus* for the parasite. The beard is occasionally seen to harbor it, as also the eyebrows and the eyelashes. But here it stops. The scalp is never affected,[1] as he hair of the head is, doubtless, too fine to afford the grasp which the parasite doubtlessly needs. So far as secondary lesions are concerned, we find little or any occurring except in the axillæ and eyelids. In the former, excoriations and polymorphous eruptions occur as the result of the scratching; whereas, in the eyelids, a condition resembling tinea tarsi is

[1] In November, 1892, Rona presented a known exception in the case of a boy of fourteen, who presented pediculi pubis and their ova on the head, neck, eyebrows and eyelashes. The migrations of all the forms of pediculi have been mentioned by several authors, but they are the exception which go far to prove the rule.

developed as the result of the rubbing occasioned by the irritation. Bluish macules are occasionally seen upon the anterior and upper portions of the thighs, and are due to the bites of the pediculi. These *taches blenátres*, as they have been denominated, are pathognomonic of pediculi pubis, and are supposed to be due to a fluid ejected by the parasites when they prepare to exercise their depleting power. The macules disappear spontaneously and seem to occasion no subjective symptoms whatever in the patient beyond more or less fright at their apparently sudden and causeless appearance.

The pediculus pubis,[1] or, as it is commonly known, "crab-louse," is of a very light grayish color, almost translucent at times. Its size varies from $\frac{1}{2}'''$ to $1'''$. The thorax is almost imperceptible, the form of the animal depending more upon that of the abdomen, which has been very aptly denominated shield-shaped, as shown in Figure 4. It is provided with small eyes, which show themselves quite distinctly. The head is

FIG. 5. Pediculus Pubis, Emerging from Ovum—(Photomicrograph from Specimen).

fiddle-shaped and the antennæ are rather long and five-jointed. There exist six four-jointed legs, the posterior two pair of which are provided with comparatively large and strong claws bearing a close resemblance to those of the lobster or crab. These claws are so muscular that, in efforts to dislodge the parasite from a hair, the hair itself is frequently pulled out. In addition to the legs which have been described, there are eight teat-like projections at the sides of the abdomen, they being prehensile feet, each one of which is provided with from four to ten hairs. These, no doubt, play quite a part in aiding the parasites to flatten themselves against the skin and thus elude observation. When so situated they are apt to be mistaken for small spots of dirt, and are very closely attached, it requiring quite some considerable force to detach them. The female, as is usual in

[1] Among the names applied to this parasite may be mentioned phthirius inguinalis, phthirius pubis, and morpis.

this family of parasites, has a notch at the extremity of the abdomen. Reproduction is very rapid, the ova being hatched out in from six to eight days. The ova are goblet-shaped, and so strongly attached to the hairs that, after hatching, the shells will remain *in situ*, as shown in Figure 5. The nits are more or less translucent, and exist along the shaft of the hair in varying numbers. The difficulty of dislodging them is very often the cause of the relapses which are so frequently observed in this trouble. The grown specimens of pediculus pubis are unusually voracious in their habits and endowed with more than ordinary vitality. They lie flat against the skin with great tenacity, by means of the four pairs of short feet with which they are provided, and being very pale in color, they often escape detection, and must be literally scraped off in order to be distinctly recognized. When in search of food they range about, most generally through the medium of hairs, although the clothing also acts as a carrier and transports them quite a distance from their original headquarters. Occasionally ova are directly transferred to new localities by means of the fingernails.

The treatment of pediculosis pubis is not always as easy as some would have us fondly imagine. When the trouble is confined to the pubic region it is not difficult to obtain a successful and satisfactory result. But when it has been disseminated over broad and extensive areas it requires some care and attention to completely eradicate the little pests. The best method of treating the affection when it involves the eyebrows and eyelashes is to remove the pediculi and their ova with fine forceps. It is not a difficult thing to do, and the results are radical. As the parasites are never present in large numbers, very little time is necessary to remove all in one short sitting.

So far as other parts of the body are concerned, any one of a number of methods may be successfully employed. One which is very popular, but which is not only filthy but very frequently liable to bring on untoward effects, is the use of mercurial ointment. Other ointments are equally disagreeable to apply and should be discarded in view of the fact that more cleanly and agreeable methods are always at hand. Lotions are certainly more desirable, but thoroughness should be observed in their use, not only in so far as each application is concerned, but as well in regard to the length of time they are applied. They should be applied twice a day for no less than eight days, as this will insure the destruction of whatever parasites that may have been hatched during this interval, and will, furthermore, prevent the breeding of a new generation. An easily obtainable lotion is a six per cent. aqueous solution of carbolic acid. One which is of value when no excoriations exist is composed as follows:

℞ Hydrarg. bichlorid ..... gr. iv
Aceti aromat ..... ʒ vi
M.

When excoriations or other secondary lesions exist, campho-phénique is not only an efficient parasiticide, but it also acts beneficially as an antiseptic and antipruritic. Another method which is a favorite with patients is as follows: Wash the affected parts twice daily with sapodermin and then apply thoroughly the following:

℞ Hydrarg. bichlorid ..... gr. ij
Ammon. muriat ..... gr. iv
Acid carbolici ..... ʒ iij
Glycerini ..... ʒ ij
Aquæ rosæ ..... q. s. ad ʒ vi
M.

All of these preparations are efficient, and they are all cleanly. In addition, they are antipruritic, thus fulfilling all the requirements of thorough treatment.

DOC BILL GILL'S DRUGS.

I'm Doc Bill Gill,
From Mo. Pike;
I'm nary little pill,
You bet that's right.

Thar's hydrarg. chlo. mix.,
The hydrarg. king;
Grains one to sixty-six
Cures everything.

Thar's ole blue pill,
Can't be beat
For all liver ill
And fever heat.

Thar's good ole opium,
Earth's easinist thing;
Brings pain to odium
Birth an' belly achin'.

Ole ipecac's all right;
A little limberin'
Make's man's head light,
Sends sours glimmerin'.

And ole glauber salts
Ain't mean a little bit;
She starts; nary halt—
Een to een she flits.

Thar's hydrarg. cum. crete,
A powder grey;
Betcherlife 'tis neat
For babe's puny way.

Thar's ole castor ile,
Musty, heavy stuff;
Cures all innard wiles—
Easy, never ruff.

Thar's rar ole quinan,
Man's bitter blessin';
God's great healin' bam
Tonic power posesin'.

Thar's ole iron tinct.,
Bilds man up;
Makes blood an' strength
Biger 'an a bull pup.

Thar's ole iodide potassy,
It's a bute;
Makes ole sick sassy,
Does it cute.

Just these here drugs
Are quantum suff.
To head off bugs
An' pizen stuff.

But fur these physics
Man's misfortune complete;
Death jest gets sizzin—
Regular dead heat.

Thar's anti this-that,
All forin mistakes;
Named big an' fat—
Coal ile fakes.

I'm death on lovin'
My dear ole frens;
When them I'm slightin',
Doc Bill Gill ends.

Exdecim.

NEW YORK LETTER.

Dr. George E. Brewer recently presented to the New York Surgical Society a case of old rupture of the quadriceps extensor tendon, for which operation was done, followed by recovery. The man was fifty-eight years old and was admitted to the City Hospital suffering from an acute traumatic synovitis of the left knee. He was an alcoholic, constantly tearing off his splints and was very unruly, necessitating his remaining in the hospital a long time. Later it was found that while the effusion was absorbed, he was unable to walk, because he could not extend the leg on the thigh. Examination revealed a marked depression immediately above the patella, the patella being loose and not at all connected with the muscular structures above. A longitudinal incision was made, the center of which was immediately over the upper border of the patella; this showed a complete rupture of the tendon just above the bone, with marked contraction of the muscle, which left an interval of about three inches. The anterior portion of the synovial membrane was practically absent.

Heavy chromicized catgut sutures were passed through holes drilled through upper border of patella; a long pin of the heaviest variety of silver wire was passed through the tendon about one inch above the division; the parts were then drawn together with considerable force. The wound was closed without drainage and put up in plaster. No reaction followed. At the end of three weeks the dressings were removed and union was found to be complete. The man now has perfect use of his limb.

Dr. F. Tilden Brown presented a case of fracture of the patella requiring excision of the knee. The man had a fracture of his patella eighteen years ago, which was followed by ligamentous union. Flexion and extension became quite limited, and the two fragments of the patella became widely separated, about five inches, and, in addition, there was a backward dislocation of the tibia. A number of unsuccessful attempts were made to bring the ends of the patella together. The joint was then opened, and the condition of affairs thus disclosed was such that immediate excision of the joint was performed. The backward dislocation of the tibia was accounted for by Dr. Brown in the chronic disease of the ligaments surrounding the joint, together with disease of the articular surfaces. The latter presented a granular, spongy appearance. As the articular surfaces were separated, the muscular attachments of the tibia probably pulled the bone backwards.

Dr. Fred Kammerer presented a case of posterior gastro-enterostomy. He showed this case in order to call attention to a new method of applying the Murphy button which has been recently advocated in France. The method is as follows: Instead of introducing the usual purse-string suture, an incision is made in the intestine about two-thirds as long as the diameter of the button, and through this incision, stretched, the button is placed. Then a suture is applied to each side of the stump, thus closing

the incision formed about the button. The two halves of the button are then approximated. In his cases this method had been satisfactory.

Dr. Arthur L. Fisk presented a case of sarcoma of the testis. A middle-aged man consulted the doctor for a large tumor of the scrotum which had existed for twelve years. The swelling seemed to consist of a large hydrocele, with a solid tumor behind it. Twenty ounces of fluid were withdrawn, after which a solid, nodular tumor of the testis could be made out. The growth proved to be a sarcoma, and the interesting point in connection with it was the slow growth of the tumor.

Dr. Alexander B. Johnson referred to a case of sarcoma of the testis which had developed a few months after an inguinal hernia. The sarcomatous process extended well up the cord as far as the external ring.

Dr. Robbert Abbe reported a very interesting case of a physician who sustained a severe accident from a gunshot wound the results of which were shown so soon as he was able to bear operative interference. The pleural cavity contained a quart of blood, and there was a rent in the diaphragm large enough to admit the hand. The first urine drawn contained almost pure blood. The liver was torn away from the suspensory ligament, and an incision over the right kidney showed that the upper third of that organ had been torn away. There was no injury to the lung or laceration of the intestines. No attempt was made to suture anything. The parts were thoroughly cleansed after removal of blood-clots, and then the space between the ruptured liver and kidney and that above the liver was packed with iodoform gauze. The rather free hemorrhage from the liver was thus checked. The patient rallied from the operation under the use of an saline infusion.

The subsequent course gave rise to much anxiety. The temperature varied from 102° to 104° F. The wound over the liver secreted bile for about one month; then the flow of bile ceased and the wound in the pleural cavity gradually closed, as in empyema. The flow of urine from the wound over the kidney continued for two and one-half months; then the sinus closed, subsequently reopened twice, and finally closed permanently. The patient has regained health and is doing very well.

Dr. McCosh referred to a case of a man who had had fourteen attacks of gall-stone colic; upon admission into the hospital he had for several weeks been running a temperature which was supposed to be due to distention of the gall-bladder. About ten ounces of fluid were withdrawn from the gall-bladder, and on examining this fluid it was found to contain typhoid bacilli and gave a distinct Widal reaction.

In carbolic acid poisoning it is known that the antidotes are: (1) stimulants; (2) soluble sulphates; (3) sulphate of magnesium; and (4) soap (Bilroth). Dr. Seneca Powell claims that one of the best antidotes, and one that has not yet received recognition, is alcohol. Experiments made by Dr. Powell and attested to by Dr. A. Lawrence Gnichtel, have shown that the naked hand can be plunged into pure carbolic acid and

then into alcohol without injurious effects. The effects of alcohol as an antidote to carbolic poisoning *per oram* is the same.

The number of heroes among medical men were largely increased during the destruction by fire of the large hotel, the Windsor. Your correspondent knows of several who, at the risk of their lives, rushed into the burning building and rescued many of both sexes. If facts were known, many physicians and surgeons would have their names enrolled among the heroes.

The County Medical Association has been asleep for a long time, judging from past attendance, but with Dr. Wiggen as presiding officer it has sprung into life, as shown by the interesting program and large attendance which marked the last meeting.

Dr. A. Ernest Gallant read an address before the New York Training School for Nurses; the subject was "The Administration of Anæsthetics." It was his purpose to impress the importance of the necessity of nurses and internes having, through training by competent instructors, a thorough understanding of the use of anæsthetics while in the hospital.

The People's University Settlement Society of New York has just completed its first year of work, and has done much to furnish instruction on health, this instruction being given by some of the most prominent physicians on such subjects as "Prevention of Disease," "Food," "Drink," "Cleanliness," "Clothing," and the like.

At a meeting of the trustees of Columbia College, President Low announced that a gift of $50,000 had been received (the name of the donor to remain secret) for the endowment of a children's ward in Roosevelt Hospital, to be known as the "Abraham Jacobi Ward for Clinical Instruction."

Harlem Hospital boasted of the largest patient ever admitted to that institution. She was a paralytic weighing seven hundred pounds, and it required the services of nine men to take her to the fourth floor.

E. FRANKLIN SMITH, M. D.

At a meeting of the Northeast Missouri Medical Association held at Memphis, Missouri, the following officers were elected:

J. T. Jones, M. D., President, Queen City, Missouri; W. E. Dicken, M. D., Vice-President, Kahoka, Missouri; E. E. Parrish, M. D., Secretary, Memphis, Missouri; O. F. Pile, M. D., Treasurer, Memphis, Missouri. The next meeting will be at Unionville, Missouri, July 11, 1899.

RAILWAY SURGERY.

L. L. Gilbert, Assistant Counsel Pennsylvania Railroad, read a paper at the last meeting of the New York State Association Railway Surgeons on "Surgical Service on Railways." The discussion following the paper presented many interesting points, and the conclusions arrived at were the following:

1. That some form of hospital service is humane and a necessity on all lines.
2. A railway hospital service is an economy.
3. It prevents litigation and favors compromise.
4. A contract hospital service costs more than a company hospital service.
5. Financial aid to the family after the death of an employe.
6. Employes favor the hospital service, and in return it improves the social relations between them and their employer.
7. The higher the character of work the better the results in surgery.
8. The plan in operation on the Plant system, and known as the relief and hospital department, is considered the most complete, and has more desirable features connected with it than any other form of hospital service. Physical examination is one of the important features of the Plant system.
9. The form known as the regular hospital system, with a chief surgeon, stands next to that of the Plant system.

The rate of assessment for maintaining the Hospital Association upon the A., T. & S. F. Railway is as follows:

From employes earning during the month

$ 30 or less,	25 cents.
30 and less than $ 60,	35 "
60 and less than 100,	50 "
100 or over,	$1.00

The above deductions shall be made from total earnings as shown on pay-rolls. The deductions used in maintaining the hospital departments upon the Missouri Pacific, the M., K. & T. and the Texas and Pacific Railway companies are: $50 and under, 25 cents; 50 cents a month over $50 a month. The A., T. & S. F., with five hospitals, only treated 1,355 patients in all of their hospitals; the Missouri Pacific Railway Hospital, with two hospitals, treated 5,609 in-patients and 23,635 out-patients.

The most frequently injured employes upon a railway are first the brakemen; next, section laborers, then switchmen. Thus, out of 4,094 railway injuries, 596 brakemen were injured, 495 section hands and 352 switchmen. The most fatal injuries generally occur to the trespasser or non-employe. Thus, out of 260 non-employes 69 were killed. More employes upon the railway are injured between the ages of twenty to thirty than any other period of life.

Dr. R. C. Taylor, Assistant Chief Surgeon of the Texas and Pacific Railway Company, paid a visit to his friends in St. Louis recently.

During the year the hospital department of the Texas and Pacific treated 4,022 cases, of which 358 were surgical. Dr. B. F. Eads is Chief Surgeon, with headquarters at Marshall, Texas.

The following is the staff of the A., T. & S. F. Hospital Association:
Dr. J. P. Kaster, Chief Surgeon, Topeka, Kan.
Dr. E. C. Chapman, Santa Fe Hospital, Ft. Madison, Ia.
Dr. A. H. Wright, Surgeon Santa Fe Hospital, Ottawa, Kan.
Dr. J. D. Freeman, Surgeon Santa Fe Hospital, Topeka, Kan.
Dr. E. B. Gossett, Assistant Surgeon Santa Fe Hospital, Topeka, Kan.
Dr. H. W. Grelitz, Assistant Surgeon Santa Fe Hospital, Topeka, Kan.
Dr. Frank Finney, Surgeon Santa Fe Hospital, La Junto, Colo.
Dr. E. B. Shaw, Surgeon Santa Fe Hospital, Las Vegas, N. M.
Dr. H. M. Smith, Assistant Surgeon Santa Fe Hospital, Las Vegas, N. M.

The total number of cases, both sick and injured, treated in all the A., T. & S. F. hospitals, were 1,355.

The Kansas City, Fort Scott and Memphis Railway Company Hospital Association has been under the able management of its Chief Surgeon, Dr. N. J. Pettijohn, since its start. The association hospital is in Kansas City, and during the year past there were treated 18,000 cases. The hospital staff consists of seventeen consultants and ninety-five local surgeons.

The St. Louis and Southwestern Railway Hospital Department has its headquarters at Tyler, Texas. Dr. C. A. Smith is Chief Surgeon, with full staff of internes and consultants. There were 9,861 employes receiving hospital benefits during the past year.

Treated at Tyler, Tex., - - - -	2806
" " St. Louis, Mo., - - -	307
" " Cairo, Ill., - - - -	332
" " Jonesboro, Ark., - - -	621
" " Pine Bluff, Ark., - - -	3975
" " Waco, Tex., - - - -	119
In-patients at Tyler, - - -	1701
Total, - - - - -	9861

Surgical Service on Railways.[1]—A SERVICE WITH LOCAL SURGEONS ONLY.—What is the best plan for "surgical services on railways" must be determined by the length of road, the number of employés, the speed, frequency and class of trains, and the character of the country through which the road passes. A plan that would be suitable for roads running through the thickly settled portions of the East, with competent surgeons and hospitals every few miles along its line, would not answer for roads

[1] Read by Geo. Marsden, Esq., Middletown, N. Y., Claim Agent Ontario and Western Railway, before the eighth annual meeting of the New York State Association of Railway Surgeons, held at the Academy of Medicine, New York City, November 17, 1898.—Abstracted from *International Journal of Surgery.*

running through the West, where surgeons are few and far between, and hospitals are unknown outside of the largest cities.

A small road running between unimportant termini has no use for vestibule trains with dining and café car attachments; large systems, like the New York Central and Pennsylvania, could hardly satisfy their patrons by carrying them on the way freights. In like manner, the small road can hardly expect to furnish *relief associations and hospital departments that may be absolutely necessary to the large systems.*

The New York, Ontario and Western Railway occupies a place midway between these two classes. It is a single track road with an aggregate mileage of 477 miles, running through the States of New York, New Jersey and Pennsylvania. The average number of employés is obout 2800, of whom about twenty per cent. are engaged in what might be called the extra hazardous service—that is, the operation of trains.

It is especially fortunate in having a superior class of employés, a large proportion of the men having grown up in the service, and some of them having been with the road since its organization thirty years ago. A great deal of care is exercised in the selection of new men, who are largely drawn from the towns along its line. Their character is carefully investigated, and their application for employment must be signed by at least two men in the company's employ.

It is not surprising, therefore, that the number of accidents happening on the road is very small. During the past eight years the average number of accidents to all classes, "passengers, employés and others," which required surgical attention, was sixty-three per year. This does not include every accident, but only such as required the services of a surgeon, and where the man laid off on account of the injury more than one day. Slight injuries which did not prevent the man from continuing his work are excluded.

The plan at present adopted by this company for the care of injured persons is as follows: An arrangement is made with a number of surgeons at various points on the line, by which they agree to attend professionally any person injured on the road within a prescribed distance from their residence, or that may be brought to them; it being understood that, in the first instance, the company has the first claim on their services at any time of the day or night, and to the exclusion of all other business. Two of these surgeons are stationed at each division terminus, and others are located at convenient points, averaging twenty-five miles apart.

In addition to this, we have an arrangement with one of the New York hospitals, and with the local hospitals at Middletown, Scranton, Utica, Oneida and Oswego, by which injured persons may be taken there for treatment at a fixed rate per day for their board and nursing, the company paying extra for the surgical attendance. We also have stretchers at a number of stations on the line for carrying injured persons about or transferring them to a hospital.

These surgeons are not paid a salary, but are given an annual pass over the road, and are paid the regular fee bill for what services they perform.

While this plan is not wholly satisfactory to the company, yet, on the whole, it is doubtful if a better or more economical arrangement could be

made. With the limited number of employés and the few accidents occurring, a company hospital would hardly be feasible, especially in view of the fact that we have so many local hospitals on which we can call.

A large proportion of the injuries which required surgical attendance in the past were sustained by freight brakemen in coupling and uncoupling cars equipped with the old style link and pin drawbar. With the introduction of the automatic coupler this class of injuries has decreased rapidly during the past few years, and as all cars must be equipped with this type of coupler within the next year, these accidents will soon practically cease. The equipping of freight cars with air brakes will also decrease the number of accidents happening from men running over the tops of cars, and a freight brakeman's life will then be almost as safe as that of a passenger trainman. This has been the experience on our road, and inquiry of other claim agents shows a similar experience on other roads.

In my opinion, this arrangement of local surgeons and the use of local hospitals, *in the case of the smaller roads*, is best both for the injured person and for the company. For the person, because he is at once given prompt surgical attendance (and in the case of this company that means the best obtainable), whereby his sufferings are alleviated and a cure, if possible, is quickly brought about. For the company, because it has at hand one who is interested in obtaining the best result as quickly as possible, with the least expense to the company. The use of the local hospitals also eliminates the exorbitant bills for board and nursing generally rendered where the injured person is cared for at some country hotel or boarding-house, and the hordes of sharks and ambulance chasers are kept at a distance.

To the claim department the surgeon is of special assistance. From him is obtained information of the nature and extent of the injury and its probable duration, so that in settling with the injured person the claim agent has a reliable basis on which to work; information not always obtainable when an outside surgeon has charge of the case.

How to Economize Life.—A man has just so many hours to be awake, and the fewer of these he uses up each day the more days will he last. I believe that a man might last two hundred years if he would sleep most of the time. That is why negroes live to such an advanced age—because they sleep most of the time. The proper way to economize life is to sleep every moment that it is not necessary or desirable that you should be awake.—TESLA.

The Heart in Typhoid Fever.—That (an unusually small heart) is what I want you to note carefully as one of the great cardiac signs in the later stage of typhoid fever. To my mind it is one of the crucial signs in typhoid fever. Why is it small? The heart wastes because the muscles waste. Wasting is a great feature in typhoid.—DR. A. E. SANSOM.

The Vitality of Epithelial Cells, and the Etiology of Cancer.—What the nature of the irritant may be that causes the localized overgrowth of epithelial cells which we call cancer, we are yet no nearer knowing than we were before the demonstration of its exact pathology, more than half a century ago. Notwithstanding all the claims that have been made of the causal influence of external biologic factors, parasites from bacteria, and fungi, schizomycetes, and blastomycetes to various forms of animal parasites, gregarines and protozoa generally, we are no nearer the solution of the problem than we were before.

Of late the subject has been approached from the other side, the essential vitality of epithelial cells and their reaction to various irritants, and some most interesting results have been obtained by various observers. In Dr. Hektoen's review of this subject for the first number of *Progressive Medicine* (the advance sheets of which are in our hands), we find some striking observations on the subject collated. Ljunggren, a Scandinavian physician, for instance, found to his surprise that he could preserve carefully sterilized bits of human skin in sterile human ascitic fluid for months, and that the cells of the tissues retained their vitality. Three months after their removal from the body the cells of the deeper layers showed well-stained nuclei and good protoplasmic structure. Successful transplantation was made with pieces kept in such sterile fluid for a month. Small pieces of the transplanted skin were removed at varying intervals, and it was found that a marked proliferation of epithelial cells showing many nuclear figures had occurred. Special precautions were taken, which absolutely assured the absence of cells that might have grown in from the surrounding cutaneous margin and so vitiated the conclusions. The transplanted cells not only grew over the raw surface, but penetrated, also, into the granulation tissue beneath, after the manner of a beginning carcinomatous growth.

Almost more interesting and suggestive that this are the observations made by Loeb here in America on epithelial regeneration. The abstract of them by Dr. Hektoen in *Progressive Medicine* is so clear and succinct that we copy part of it *verbatim:* "From the margin of a tissue-defect huge epithelial protoplasmic or plasmodial masses move in a sliding manner over the naked surface, inclosing and dissolving the crust and other obstacles. Regenerating epithelium readily removes such substances as cartilage when placed in its way. Below the protoplasmic layer epithelial cells wander in from the margins of the defect, and often grow down into the connective tissue, apparently checking the growth of the latter. The process is closely allied to changes in carcinoma. At the same time active changes, such as mitoses, occur in the epithelial cells removed some distance from the margins of the wound. * * * Loeb believes that the wandering of the cells, as outlined, is in response to stereotropism, and forms a determining factor in inducing mitosis in the remaining cells." The pregnant significance of these observations, especially the apparent action at a distance of epithelial elements in arousing epithelial cells into repro-

ductive and germinal activity, can scarcely be overestimated. This is the essence of carcinoma, though in healthy subjects the vital resistance may be sufficient to restrain the morbid overgrowth that would otherwise result.

According to Loeb, "if a small bit of epithelium is placed in the center of the crust covering a defect in the skin, it begins to send out processes in all directions into the crust, the cells acting as separate organisms, independent of blood supply or nervous influence." We are evidently closely in touch, in these manifestations, with the as yet inexplicable vital forces that we see at work in all their untrammeled energy and power in cancer. Further observations are needed to give the deductions from these observations practical application. They constitute, however, the most hopeful aspect of the present pathological work on cancer as far as regards the near prospect of discovering its etiology. Their value as additions to biological science, especially to that mysterious problem, the struggle for life among the various cells of the body tissues, can scarcely be overestimated.

Probing a Wound.—For probing, a blunt-pointed, flexible rod should be used; the probe extremity should be sufficiently large, so that it should not easily make a passage for itself in the tissues; the shaft should be flexible, so that it may be adapted to the principal course of the track that is being explored, and should be long enough to admit of being easily and distinctly controlled by the hand of the surgeon. Such a probe having the tip made of porcelain-biscuit, and known as Néleton's probe, has the special value that when the tip comes in contact with the bullet at the bottom of the wound it retains the mark of the lead upon it, and thus gives an absolute demonstration that it has been in contact with the bullet. Before using it its freedom from any prior stain must be ascertained. The stem of an ordinary clay pipe has been used extemporaneously for the same purpose. The "telephonic probe" of Girdner is an ingenious and reliable application of the telephone for identifying the location of the bullet in the tissues. This device may be extemporized whenever an ordinary telephone receiver is accessible; one of the wires of the telephone having been attached to the probe, the other is made fast to any metallic plate, which is now placed upon any portion of the surface of the body previously moistened. The probe is now inserted into the wound for the purpose of the search, while the telephone receiver is held to the ear of an assistant; whenever the probe comes in contact with the bullet a distinct click is heard in the telephone—the click which is not elicited except by contact with metal. Other methods for utilizing the electric current for detecting and locating the bullet imbedded in the tissues have been devised; some of these are ingenious and successful as experiments, but none are susceptible of being utilized in general practice.—DR. LEWIS STEPHEN PILCHER (*The Treatment of Wounds, Its Principles and Practice, General and Special, page 281*).

MEDICAL NOTES.

Premature Baldness.—Some one said, not long ago, that the ideal symbol of faith was not the traditional maiden clinging to the Rock of Ages, but the bald-headed man confidently consulting the bald-headed specialist and faithfully looking for relief for his bald-headedness. It is a very suggestive symbol of human limitations, but when hair follicles are gone it would take a special creative act to replace them and the hirsute appendage they furnish. The treatment of premature baldness, however, is not so hopeless if it is taken in time; and skin specialists are agreed that much can be done for the condition if properly treated by prophylaxis and early attention. In these preliminary stages, and before the real beginning of the alopecia, properly so called, the cases come into the hands of the general practitioner. Too often he is prone to make little of them, or to consider that they are inevitably progressive anyhow, and so a deformity is allowed to supervene that is unsightly and a cause of a great deal of annoyance to the patients.

Prophylaxis is especially important. Dr. Jackson, in his "Manual of Skin Diseases," insists on two things: the influence of heredity in these cases and the ætiological importance of dandruff. Fathers and sons for generations may grow bald early, or the inherited peculiarity may have to be traced to the grandparents or some collateral line. Not all the children in one family in which baldness is hereditary are bald, but it will manifest itself in two or three of the children. The necessity for prophylapsis in these cases is evident. *Hygiene of the scalp* must begin at the very beginning of life and be continued persistently. Its details, as given by Dr. Jackson, are irksome, but most mothers whose sons are threatened with their father's early baldness, will be perfectly willing to take the additional trouble; and as for the sons themselves, as soon as they come to the years of *in*discretion (or vanity), which is generally considered to be about the age of fifteen, they can usually be depended on to take for themselves all necessary precautions to stave off the unwelcome parental inheritance.

As to dandruff, it constitutes, according to Dr. Jackson, the cause of seventy per cent. of the premature baldness that occurs. Not that everyone that has dandruff will become bald—experience is against that; but it is very often true that an error in the nutrition of the sebaceous glands causes sympathetic trophic disturbances in the hair follicles and hair production ceases. In this class of cases early treatment is of the utmost importance. Lassar's method requires the taking of a good deal of trouble on the part of the patient, but it is deservedly popular because of its frequent success. In general, however, the cure of the condition causing the dandruff, which is now considered to be, in all cases, a form of eczema, seborrhoicum, will stop the loss of hair. Persistence of treatment for months is necessary, but will nearly always be crowned with success if the condition was not too far advanced when treatment was begun. When there is absolute baldness it is extremely doubtful if anything can make the hair grow.—JACKSON.

Points in the Arsenical Caustic Treatment of Cutaneous Cancers.—1. The arsenious acid caustic treatment of skin cancers does not contemplate or depend upon the actual destruction of the new growth by the caustic.

2. The method is based upon the fact that newly formed tissue of all kinds has less resisting power than the normal structure when exposed to an irritation and its consequent inflammation. Hence, the former breaks down under an "insult" which the latter successfully resists.

3. If, therefore, the whole affected area can be subjected to the influence of an irritant of just sufficient strength to cause a reactive inflammation intense enough to destroy the vitality of the new cells, the older normal cells will survive.

4. Arsenious acid of properly mitigated strength is such an agent, and its application causes an inflammation of the required intensity.

5. It, therefore, exercises a selective influence upon the tissues to which it is applied and causes the death of the cancer cells in localities outside the apparent limits of the new growth, where there is as yet no evidence of disease.

6. It is superior, in suitable cases, to any method, knife or cautery, which requires the exercise of the surgeon's judgment as to the extent to which it is to be carried. That that judgment is often wrong, and necessarily so, is shown by the frequency of recurrence under these methods even in the best hands.

7. It is applicable to all cutaneous carcinomata in which the deeper structures are not involved, and which do not extend far onto the mucous membranes.

8. It is easy of application; it is safe; it is only moderately painful; and its results compare favorably with those obtained with other methods. —GOTTHEIL.

German Specific Against Sea-Sickness.—Bright-red spectacles, accompanied by internal doses of calomel, form a new German specific (?) against sea-sickness. Sea-sickness is due to a lack of blood in the brain, while (according to Epstein's investigations) red sends blood to the brain with a rush. By looking at one point for some time through the red glasses the patient is cured.

Blood-Letting in Italy.—In some parts of Italy blood-letting is still held to be a cure-all. Some time ago a sick child was bled until the mother timidly protested. The doctor assured her that one more application of the cups would insure recovery. In spite of this, the next morning, when the doctor came, the mother sobbed out that her baby was dead. "Madam," said the doctor, "be comforted by knowing that your child died cured."—*The Medical Age.*

Warner's Pocket Medical Dictionary. This useful little volume comprises the pronunciation and definition of 10,000 essential words and terms used in medicine and associated sciences. The price, 75c., brings it within the reach of all. There are many physicians who can study this dictionary with profit.

Text-Book of Anatomy, Physiology and Hygiene. By E. FRANKLIN SMITH, M. D. Duodecimo, xvii., 197. New York: William R. Jenkins.

Dr. Smith has compiled a work which will prove a superior text-book. We heartily commend this book.

The International Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. Seventeenth year. 1899. New York: E. B. Treat & Co., 241–243 West Twenty-third street. Price, $3.00.

This volume of the "Medical Annual" contains 758 pages written by thirty-two English physicians. The work compares favorably with preceding ones of the same series.

The Pathology and Treatment of Sexual Impotence. By VICTOR G. VECKI, M. D. From the author's second German edition. Duodecimo, pp. 291. Philadelphia: W. B. Saunders. 1899.

This is a most fascinating book on an important but oft neglected subject. The author's statements are reasonable and his advice seems good. There is so much of value in this little treatise that we would advise our readers to buy the book.

Gerrish's "Anatomy by American Authors." Gerrish's forthcoming *Anatomy by American Authors* promises to be the work for which teachers and students have long been looking. Its editor, Professor F. H. Gerrish, of Portland, has selected as his fellow-contributors leading anatomists throughout the country, wisely restricting their number to accord with the best division of the subject, gaining thereby unity in result joined with the highest authority. The list includes Professors Bevan, of Rush in Chicago; Keiller, of the University of Texas; McMurrich, of the University of Michigan; Stewart, of the University-Bellevue College in New York; Woolsey, of Cornell Medical College, likewise in New York, and Gerrish himself, who is not only editor but perhaps the largest contributor.

The plan of the work judiciously avoids the unimportant and exceptional, reserving its space for those portions of anatomical knowledge which are necessary to the intelligent study of physiology, surgery and internal medicine. The authors have endeavored to stand in the place of a living teacher to the student, selecting such portions as will be of actual service to the pupil in his study and to the practitioner in his subsequent clinical work, clarifying obscurities, giving most help in the most difficult parts, and illustrating everything by all available methods. Pictorially *Gerrish's Anatomy* will be by far the most lavish work ever offered on a subject which can already boast of many elaborately illustrated text-books. The engravings number about one thousand, their size is large enough to make visible every detail, colors have been employed more liberally than ever before, and lastly, the labels of the parts have been conspicuously engraved upon them, whereby a glance gives not only their names, but also their position, extent and relations, obviating entirely the slow, toilsome and wasteful mental processes necessitated where only reference letters are employed.

In an early issue we shall give our readers a review of the book itself.

The Medical News Pocket Formulary for 1899. Containing sixteen hundred prescriptions representing the latest and most approved methods of administering remedial agents. By E. Quin Thornton, M. D., Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. In one wallet-shaped volume, strongly bound in leather, with pocket and pencil. Price, $1.50, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

A more helpful book it would be difficult to devise. No man, except a specialist like the author, can be expected to keep posted on all the new remedies and to reject those which are valueless, together with those which are outworn, leaving a net residue representing the body of the best therapeutics at date. Dr. Thornton has done this, arranging the prescriptions under alphabetical headings of disease, so that the medical man, be he physician, surgeon or specialist, can instantly run his eye over the authoritative recommendations of the world's leaders in all the practical branches of medicine in the broadest sense of the word. The author has subjected each prescription to careful study and verification, and has appended useful annotations, and indications as guidance in meeting the various stages and complications. Due attention has been paid to palatability and pharmaceutical elegance, points of increasing practical importance. The volume opens with a number of pages of useful data.

HYDROZONE (30 volumes preserved aqueous solution of H_2O_2)

IS THE MOST POWERFUL ANTISEPTIC AND PUS DESTROYER.
HARMLESS STIMULANT TO HEALTHY GRANULATIONS.

GLYCOZONE (C. P. Glycerine combined with Ozone)

THE MOST POWERFUL HEALING AGENT KNOWN.

These remedies cure all diseases caused by Germs.
Successfully used in the treatment of diseases of the Genito-Urinary Organs (Acute or Chronic):

WHITES, LEUCORRHŒA, VAGINITIS, METRITIS, ENDOMETRITIS, ULCERATION of the UTERUS, - URETHRITIS, GONORRHŒA, - CYSTITIS, ULCER of the BLADDER, Etc.

Send for free 240-page book "Treatment of Diseases caused by Germs," containing reprints of 120 scientific articles by leading contributors to medical literature.

Physicians remitting 50 cents will receive one complimentary sample of each, "Hydrozone" and "Glycozone" by express, charges prepaid.

Hydrozone is put up only in extra small, small, medium, and large size bottles, bearing a red label, white letters, gold and blue border with my signature.

Glycozone is put up only in 4-oz., 8-oz. and 16-oz. bottles, bearing a yellow label, white and black letters, red and blue border with my signature.

Marchand's Eye Balsam cures all inflammatory and contagious diseases of the eyes.

PREPARED ONLY BY

Charles Marchand

Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France).

Charles Marchand, 28 Prince St., New York.

Sold by leading Druggists. Avoid Imitations. ☞Mention this Publication.

These ESSENTIALS forthe PERECT EMULSION of God Liver Oil:

Fully Fifty % Choicest Norway Oil, chemically unchanged;
Emulsionizing of the Oil by Pancreatine;
Minute Sub-Division of the Oil Globules, as in Milk;
Acid Reaction—To Preclude Saponification;
Complete Miscibility in Water, Milk or other Fluid;
Digestibility—Palatability—Permanency,

Are fully met in the . . .

PHILLIPS' EMULSION

WITH THE SOLUBLE PHOSPHATES.

It furnishes at once those elements of nutrition to counteract systemic waste—the *OIL* supplying *FAT*, the *PHOSPHATES*, *FOOD* for *BLOOD*, *BRAIN* and *NERVE*—not exhibited in any other preparation. Prescribe *"PHILLIPS'."*

The Physician who prescribes the

PHILLIPS' PHOSPHO-MURIATE OF QUININE,

COMPOUND,

owes it to his patient, himself—and us to specify PHILLIPS', and to see the patient gets it.

This compound of the **Soluble Phosphates**, with **Muriate of Quinine**, **Iron** and **Strychnia**, will not disappoint where an easily appropriated general tonic is desired and has proven itself one of the most thoroughly reliable **Alterato-Constructives** to be had.

The increasing substitution and imitation of this standard preparation *can* be checked with professional co-operation.

PHILLIPS' { DIGESTIBLE COCOA / WHEAT PHOSPHATES. / MILK OF MAGNESIA.

THE CHAS. H. PHILLIPS CHEMICAL CO.,
77 Pine St., New York.

NEW REMEDIES.

Nosophen.—(By R. F. Amyx, M. D., Senior Assistant, St. Louis City Hospital.)—The value of therapeutic agents is only satisfactorily determined by clinical tests, and reports of such tests furnish the best method of presenting the merits and employment of remedies. With this fact in view, I present several cases in which nosophen was used at the St. Louis City Hospital.

CASE 1.—John K., æt. thirty-six; nativity, Ireland; occupation, laborer; domestic relations, single. Family history is good. Habits: uses whisky and tobacco. Indulges excessively in venery. Previous history: had measles, scarlatina and pertusus during childhood. Had malaria several times, pneumonia five years ago, gonorrhœa twice, no history of syphilis. Present history: patient entered hospital for the purpose of being treated for sores on his penis. Examination of penis revealed several chancroids on glans penis and prepuce. The lesion on glans penis included the corona glandis and the whole right side and under surface of the glans. Those on the prepuce were located at fold of transmission. Nosophen was employed as a local application for a period of three weeks. After the first week the profuse secretion which existed at the time patient entered hospital had completely disappeared, and the lesions presented a clean, granulating surface. At the end of the third week the chancroidal lesions had completely resolved. During time of treatment patient complained of no pain, nor were there any toxic symptoms.

CASE 2.—Hattie S., æt. twenty-five; nativity, Missouri; social condition, married. Patient was admitted to hospital for treatment of laceration of perineum, this condition having been produced one week before coming to hospital. Examination showed that laceration extended down to external sphincter ani. Patient stated that physician who delivered her sutured the laceration immediately after delivery. Suppuration developed several days later, and sutures sloughed. When patient entered the hospital, the wound was covered with pus, and sides of wound were ragged where sutures sloughed, leaving wound completely open. Patient was anæsthetized and wound cleansed, disinfected, and necrotic tissue cut away. Nosophen was liberally dusted over wound, and wound again sutured. Nosophen was again applied externally. This dressing was continued for two weeks at the end of which time sutures were removed, and aside from a few slight stitch abscesses the wound was completely healed. While it is not evident that the nosophen naturally shortened the period of repair, the fact that the first sutures sloughed, while the second ones did not at a time when there was a greater liability for sloughing, all points to the good influence of the dressing used.

CASE 3.—Thos. H., æt. thirty-five; nativity, Mississippi; occupation, laborer; social condition, single. Patient came to hospital for treatment for several large ulcers on his back, resulting from a burn which occurred three months previous. Ulcers were about two inches wide and four inches

Chloralamid-Schering

is a hypnotic of tried and approved value. It possesses undoubted advantages over other hypnotics in Prompt Effect, Reliable Action, Freedom from Evil After-effects and General Superior Therapeutic Value, as confirmed by contributions to current literature by H. C. Wood, W. Hale White, John V. Shoemaker, Chas. L. Dana, Chas. H. Steele, John Aulde, S. V. Clevenger, and many other authorities.

Much depends on the proper administration of Chloralamid to obtain the full effect.

Elixir Chloralamid

presents the hypnotic in most suitable form. Supplied in 8 oz. original bottles.
Dose One tablespoonful (15 grains Chloralamid).

LEHN & FINK, Manufacturing Chemists, NEW YORK.

PAMPHLETS CONTAINING CLINICAL REPORTS, MAILED ON REQUEST.

HYPO-QUINIDOL (Gardner).

A NEW FORM OF QUININE, SUPERIOR TO THE SULPHATE AS A TONIC, ANTI-PERIODIC AND HÆMATOGENIC.

A new chemical combination of quinine and phosphorus, freely assimilable, non-irritant, very soluble, and indicated in all cases of fevers, malarial troubles and as a tonic. Its indications are the same as for sulphate of quinine.

The phosphorus, being in its lowest state of oxidation, is free from irritating properties, and acts as a powerful hæmatogenic, thus counteracting the pathological action of the quinine upon the blood, while the tonic, anti-periodic and germicidal action of the compound is superior to that of the sulphate quinine.

Hypo-Quinidol (Gardner), being very soluble and deliquescent, is only put up in the form of pills (1 and 2 grains), protected from atmospheric oxidation and deliquescence by an impervious coating, which also conceals its bitter taste. Literature upon this new preparation sent physicians only upon request and receipt of professional card. Address:

R. W. GARDNER, Pharmaceutical Chemist,
156 William St., New York City.

SCHIEFFELIN & Co., New York, Distributing Agents for U. S. A.

long, and very deep with edges undermined. Both were covered with pus, and there was considerable necrotic tissue. The latter was cut away and surface of ulcers thoroughly cleansed. Ulcers were covered with nosophen and a dry dressing applied. After several dressings the pus disappeared, and surface was covered with clean granulations. Patient did not remain until ulcers entirely healed; but the effect of the nosophen dressing was very satisfactory, as the pus which had been a great source of annoyance at the beginning had entirely disappeared; and at time the patient left the hospital the ulcers were reduced in size two-thirds.

Nosophen was used with gratifying results in a number of other cases, in which more or less pus was present. A uniform result was obtained in as far as its use as a dry dressing was concerned, and the unpleasant odor of some other dressing powders was not present.

Euquinine.—(G. Howard Thompson, M. D., Professor Materia Medica, St. Louis College Physicians and Surgeons.) My experience with euquinine has been confined chiefly to malarial cases, with here and there a case of *la grippe*. In a previous report[1] I showed the value of this remedy in cases of idiosyncrasy against the various other alkaloids and preparations of cinchona. I now desire to show its value as a remedy in malaria in its various other manifestations.

For two years I have used it almost exclusively in treating children wherever there was an indication for quinine, for the following reasons:

It represents fully the entire desirable therapeutic action of quinine sulphate in malaria, meeting both the antipyretic and antineuralgic indications without presenting any of the objectionable features.

It has no bitter taste; in fact, it has practically no taste at all, and may be taken clear and washed down with a swallow of water, milk or other beverage.

It produces no gastric irritation, nausea nor anorexia.

It produces no cardiac depression.

It produces no objectionable head-symptoms and but slight ringing in the ears, even when administered in large doses.

It produces no erythema medicamentosa nor other untoward effects, even in those with an idiosyncrasy against other quinine preparations.

It produces no after-effects.

Euquinine, or ethylcarbonate of quinine, is of neutral reaction, soluble in alcohol, chloroform and ether, but practically insoluble in water, which accounts for its lack of taste. Physiologically it requires to be given in nearly twice the amount of quinine sulphate to produce the equivalent therapeutic value, and, lacking the objectionable features of the latter, may be given in quantity sufficient to produce therapeutic results and accomplish cures in cases where quinine itself could not be administered, as the following case will illustrate:

Baby A., seven months of age, presented characteristic symptoms of intermittent fever of the tertian variety, the chill coming every other day at six o'clock in the evening, and temperature of 105° following immediately. Baby was at once put on euquinine as in the following formula:

[1] TRI-STATE MEDICAL JOURNAL, vol. vi., p. 152.

℞ Euquinine ..... ℈ ij
Syr. yerbæ santæ ..... fl ℥ iij
M. et Sig.—A teaspoonful every two hours; two teaspoonfuls at 2 P. M. preceding the expected chill.

The expected chill did not take place. After the suppression of the chills the directions were changed to three times a day. The baby made a good recovery. This dose is the equivalent of one grain of quinine sulphate to the teaspoonful, an amount which, considering the undesirable effects of quinine, I would regard as too much for a baby seven months of age. Only an agent presenting exclusively the therapeutic and not the untoward action of quinine could be safely given to a baby of this age.

As an anti-neuralgic in cases of chronic as well as acute malarial infection, euquinine is also as efficient as quinine sulphate, as the following case will illustrate:

Peter B., aged fourteen years, had chronic malarial poisoning characterized by a severe supraorbital neuralgia. Quinine sulphate had been given in five-grain doses, but was followed by nausea, headache and ringing in the ears. Patient refused to take quinine any more. Euquinine in ten-grain doses was substituted and administered at four-hour intervals. It produced no untoward effects, gave immediate relief, and, after continuing for three days without recurrence, continued the remedy in six-grain doses three times a day. This boy made a good recovery.

Although I have never been much in the habit of treating whooping-cough except by inhalations, I did get very good effects in a case whose circumstances were such that my customary treatment could not be carried out. It was a child five years of age, to which euquinine was given in four-grain doses three times a day, with the result that the spasmodic efforts at coughing were greatly alleviated and the course and severity of the disease materially shortened.

George F., aged three years, a case of chronic malarial poisoning, with a daily fever of 102°, with headache and neuralgic pains in the back and legs, and entire loss of appetite; no cough nor catarrhal symptoms. He never had taken medicine kindly. At the time I met him I gave him a dose of two grains of acetanilid for immediate effect on his fever and neuralgia, and prescribed euquinine in doses of two and a half grains every three hours. The fever and neuralgia subsided within two hours and did not recur again, although he had been sick for a week preceding. His recovery of appetite was immediate, and in two days was as strong as ever.

This remedy, I believe, completely substitutes quinine sulphate wherever it is indicated in the treatment of diseases of childhood; wherever quinine is not tolerated by reason of idiosyncrasy, and wherever else, for that matter, that quinine sulphate or any other representative of the cinchona group of alkaloids is indicated.

Sixth and Washington Avenue, St. Louis.

Dionin: A New Morphine Derivative.—A new morphine derivative has recently been introduced to which the name "dionin" has been given. It is described by Ludwig Hesse (*Pharm. Centralh.*, xl., p. 5) as the hy-

drochlorate of morphine mono-ethyl ether, or ethyl-morphine, having the composition

$$C_2H_5O(HO)C_{17}H_{17}NOHCl + H_2O.$$

It occurs as a white, somewhat bitter, micro-crystalline powder, which, under the microscope, is seen to consist of fine needles. It melts at 123°–125° C., and decomposes at the latter temperature. Dionin appears to be very serviceable therapeutically, because it affords neutral solutions which may be advantageously employed subcutaneously. It is soluble in about 7 parts of water, in about 1.4 parts of alcohol, and in about 20 parts of syrup; while it is insoluble in ether and in chloroform. It is precipitated from its solutions by most of the alkaloidal reagents. The pure base, morphine mono-ethyl ether or ethyl-morphine, is readily liberated by alkalies, and crystallizes from water also with one molecule of water of crystallization. It is quite insoluble in water, one part dissolving in 286 parts of the latter; it is very soluble, however, in alcohol, 100 parts of the latter dissolving 140 parts of the base. It is also easily soluble in ether, but difficultly so in benzene, and is almost insoluble in benzin. Dionin has been employed by Dr. O. Schroder and by Dr. J. Korte (*Therap. Monatsh.*, xiii., p. 33) in a score or so of phthisical cases, and from the results obtained the author believes that the preparation is of unquestionable value therapeutically. It appeared to be an excellent and reliable means in the treatment of cough due to irritation in the early stages of pulmonary phthisis; and he recommends it to be used instead of codeine and morphine in all cases of this disease that are not far advanced, as well as in chronic bronchitis, pulmonary emphysema, and bronchial asthma. Not a single failure ure was observed by the writer among the cases so far treated by him. The dyspnœa and cough were always relieved, the asthmatic attacks cut short, and expectoration favorably influenced. Compared with morphine, dionin is more mildly narcotic in action, has scarcely ever any noticeable effect on the digestive tract, and has no noteworthy by-effects. Compared with codeine, on the other hand, it is found to be more powerful generally, and more persistent in action; it affords better and quieter sleep, and increases expectoration considerably. As a general analgesic, dionin is not as reliable as morphine, but it may, nevertheless, be employed in chronic, painful affections, either internally or subcutaneously, and as no tolerance or habit is ever established, may shield many patients from acquiring the morphine habit. Its particular sphere of action will, however, doubtless be in the treatment of coughs due to irritation, and those of bronchitis of every origin; in phthisical subjects, as it affords, besides, general quiet and good sleep, stimulates expectoration, and appears to exert also a beneficial influence on the night-sweats.

Dionin may be given in doses of 0.015 gm. (¼) several times daily, or in one dose of 0.03 gm. in the evening, in solution, syrup, or pill form.